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ABSTRACT

Designed particularly for use in developing countries, this guide provides information to help teachers of librarianship and information science make their own simple and effective audiovisual (AV) materials. It is noted that all illustrations in the guide may be duplicated or adapted as desired. Sections cover: (1) the advantages of using AV teaching materials; (2) the types of staff-developed and externally produced AV materials used; (3) the use of AV materials in selected areas of library/information science teaching, including bibliography, management, children's librarianship, international and comparative librarianship, information technology, and information retrieval; (4) studying the target audience; (5) choosing the correct format; (6) planning the AV materials; (7) overhead transparency production; (8) slide production; (9) preparation and storage of talk-over slide sequences; (10) sound recording; (11) preparation and storage of tape/slide programs; (12) video production and storage; (13) adaptation of AV materials and programs produced by other teachers and those commercially produced; (14) presentation of AV materials; and (15) basic maintenance of projectors, audio equipment, and video equipment. A final section discusses the promotion of AV material development by teachers of library/information science in developing countries. A list of equipment requirements for library/information science training institutions is provided. (ESR)

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GUIDE TO THE PRODUCTION AND USE OF AUDIO-VISUAL AIDS IN LIBRARY AND INFORMATION SCIENCE TEACHING

prepared by

Anthony H. Thompson

General Information Programme and UNISIST

United Nations Educational,
Scientific and Cultural Organization

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PREFACE

This guide has been written under contract by Anthony Thompson, College of Librarianship, Wales (United Kingdom). The need for such a work had been emphasized at several meetings including a Unesco sponsored Regional Seminar on Audio-Visual and Computer-assisted Instructional Aids in Library and Information Science Courses organized in November 1981 by the Institute of Library Science, University of the Philippines, in Manila.

The aim of the guide is to stimulate the production of audio-visual materials and to promote its use by schools of library and information science, particularly in developing countries, with a view to improving the teaching/learning process. It emphasizes the importance of training teachers of library and information science in the use and preparation of audio-visual aids and contains practical indications about audio-visual equipment suitable for use in developing countries.

It is hoped that this guide will be widely used and contribute to the more effective utilization of audio-visual aids by teachers of library and information science all over the world.

ACKNOWLEDGEMENTS

The author wishes to thank members of the teaching staff of the College of Librarianship, Wales, who provided him with information on their use of audio-visual aids and in particular Christopher Baggs, Tony Curwen, John Hepworth, Peter Underwood and Alan Wheatley who provided examples of their overhead transparencies for reproduction in the guide. Special gratitude is expressed to his wife, Jan Russell, for her valuable work and help in preparing this work for publication.

THE PRODUCTION AND USE OF AUDIO-VISUAL AIDS IN LIBRARY AND INFORMATION SCIENCE TEACHING

0. INTRODUCTION

0.1 Aim

The aim of this guide is to help teachers of librarianship and information science make their own simple and effective audio-visual teaching aids, using materials and equipment to be found in nearly all parts of the world.

0.2 Objectives

The objectives are:

to encourage teachers to use audio-visual aids;

to enable teachers to produce aids, designed for their own teaching requirements, that are of sufficiently high standard to be effective--quality of production being as important as quality of content;

to suggest areas of library and information science teaching in which aids might be used effectively;

to encourage teachers to communicate more effectively by introducing into the classroom new objects and experiences;

to enable teachers to adapt to their own requirements audio-visual aids produced elsewhere.

0.3 Target audience

This guide is intended for teachers of librarianship and information science. Sophisticated processes and production techniques are deliberately omitted as many teachers have neither access to such facilities nor the means to use them.

0.4 Notes on the guide

0.4.1 The text is not intended to be read in its entirety at one sitting. A glance at the table of contents will reveal those sections of immediate interest to the individual teacher.

0.4.2 The guide is based primarily on the personal experience of the author. Readings are not given, as the few appropriate ones that exist are thought not to be widely available.

0.4.3 Illustrations. Apart from examples of other teachers' work in section 3, the illustrations are those designed or drawn by the author for use in overhead projectors. These have usually been reduced by photocopying to either one half or one quarter of the original size. All illustrations in the guide may be copied or adapted as desired.

0.4.4 Copyright. As the rules of copyright vary from one country to another, teachers must bear in mind the laws of their own countries when considering some of the processes discussed.

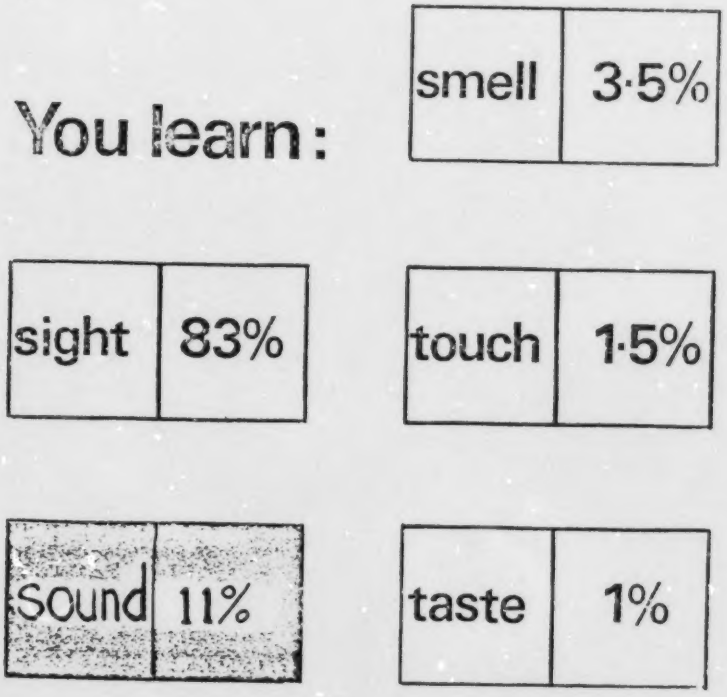
1. WHY USE AV AIDS?

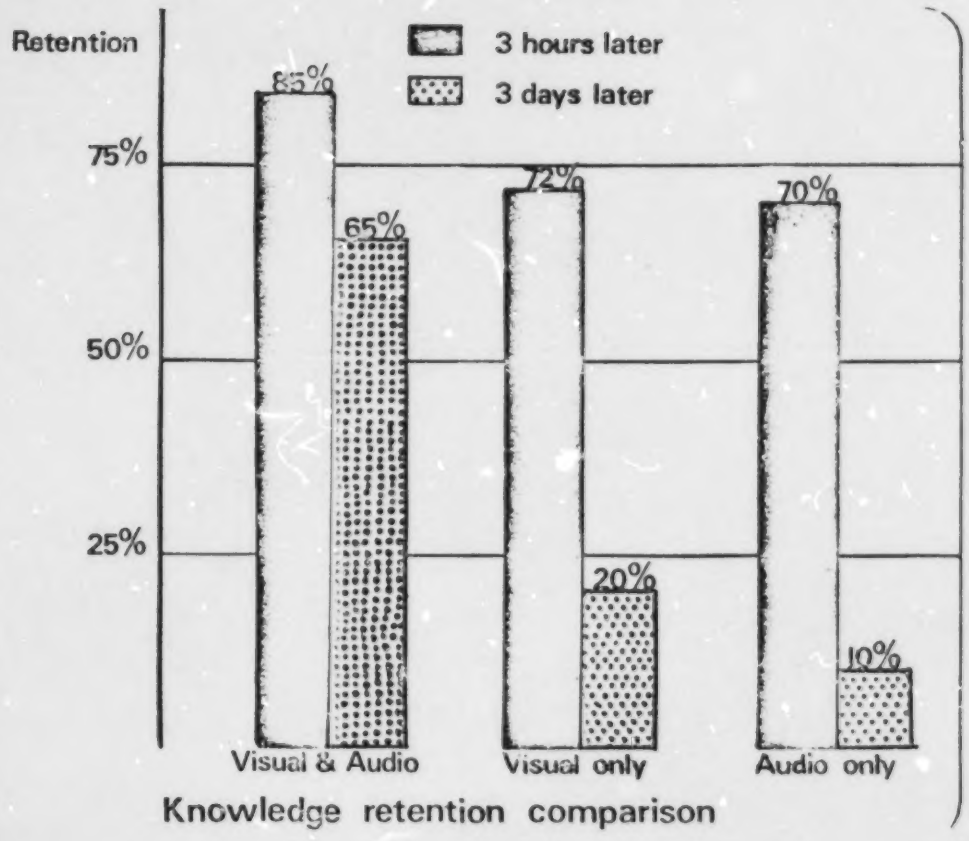
1.0 Introduction

Research has shown that use of av aids in education increases learning effectiveness. The methods teachers use to communicate information are therefore important.

1.1 Learning and retention of information

The ways in which we learn and retain information can be measured. Indeed, several sets of statistics have been compiled which give slightly different but similar results.





Knowledge retention comparison

Other statistics suggest that learners retain only 10 per cent of what they read but remember 90 per cent of what is said and done as they take part in educational activities--e.g. workshops and practical sessions.

These statistics result from research done in the United States of America. Though the figures may vary somewhat in another country, there remain implications for education worldwide. Librarians and information scientists, whether or not they are teachers, are professional disseminators of information and need to be aware of, and use, the most effective methods of communication. The communication techniques most commonly used in teaching library and information science are oral and print-based, just the ones thought to be least effective.

1.2 Advantages of av aids in teaching

Effective av aids can enrich the educational process:

By widening the range of information the teacher is able to present. It is impossible for the teacher to simply describe every concept or situation effectively. Av aids can add visual and aural dimensions concerning libraries, people, systems, ideas, events, problems and situations. Not only can systems be shown in action, but the views of those using them can be heard.

By increasing the efficiency of the teacher. The use of prepared av aids can reduce time lost in writing on the blackboard, and dictating notes and lists, increase actual teaching time and result in more relaxed communication, while maintaining eye contact with the students. The teacher can then better gauge reactions and encourage discussion.

By presenting information in a more interesting format. The effectiveness of learning based on the human voice and the printed word is limited. As television and other forms of audio-visual presentation become more widespread in daily living, many students may find it easier to learn from these media than from books.

By relieving the tediousness of regularly repeating lectures. Many teachers have to frequently repeat the same or very similar lectures. Reliance on written notes can lead to a stereotyped approach and boredom, which can communicate itself to the students. Av aids allow the teacher to adapt each lecture to the specific group of students involved.

By ensuring a presentation of high quality. Apart from regular teaching assignments there may be special occasions when a teacher wishes to make a particularly good presentation, as at conferences, meetings and public relations exercises. Av aids may help in this effort.

By permitting guided individual study as appropriate. The teacher will often want the students to gain more information than can be imparted during the lectures. Audio-visual programmes can broaden and supplement the 'reading list'. Some students will be more inclined to watch an assigned programme than to read a book or periodical article. The audio-visual programmes which students watch individually can be discussed in class afterwards. This allows the teacher to correct information with which he does not agree or which the students have misunderstood.

By relieving dependence on print-based resources. Many teachers and students lack access to a satisfactory collection of library literature. Even when available, books and periodicals may not be present in sufficient copies or may be in the wrong language.

Av aids allow teachers to build up their own collections of effective teaching and learning materials to meet their own specific requirements and fit their own teaching techniques. Copies of such aids can be made for use by students in the library. Unlike books and periodical publications, some av aids can be produced economically in single copies or small numbers.

Teachers can also co-operate with teachers in other institutions in building collections that can be easily duplicated, exchanged or adapted.

By changing the pace of the lecture. Av aids break or change the flow of oral communication to the benefit of teacher and students.

1.3 Conclusions

1.3.1 Some teachers have dismissed the idea of using av aids because they fear that audio-visual materials will replace the teacher. This perhaps natural reaction does not stand up to examination as the experiences of many other teachers show. The term 'audio-visual aid' describes these materials exactly--they are aids for a teacher and are always to be used in conjunction with a teacher. No audio-visual aid is complete in itself. A teacher is required for its use and interpretation. The production of a range of aids so complete that it could replace a teacher is not possible; it would cost far more than a teacher and become out of date very quickly. Indeed, many teachers who use aids have found that far from replacing them, these aids have made their work more effective and themselves more irreplaceable.

1.3.2 Some teachers have tried to use av aids which they have had made for them and found that either they were unsuitable or that they were produced with too long a delay. Others have attempted to make aids themselves which have proved ineffective. These experiences have led them to become disillusioned.

1.3.3 This guide will show teachers--whether they have previously used aids or not--how to produce aids that are not only well-designed but also well-produced. The aids that work best are those which are carefully planned to meet a specific need and target audience, and which reach acceptable standards of production.

2. WHICH AIDS ARE USED?

2.0 Introduction

In preparing this guide, the author consulted the staff of the College of Librarianship, Wales, about the types of av aids they employ, and the uses to which they are put.

The following table shows the types of av aids used by the twenty staff members consulted:

Type of aid	Number of staff using each aid
Overhead transparencies (OHT)	18
Photographic slides (35mm)	11
Video recordings	6
Audio recordings	5
Real objects	5
Tape slide programmes	2
Externally produced av programmes	13

All the teachers use one or more types of aids in their work. It is necessary now to distinguish between aids developed by local staff and externally produced av programmes.

2.1 Staff developed aids

These are aids either produced entirely by the teachers themselves, or designed by them and produced with the assistance of local audio-visual technicians. These are rarely in the form of complete programmes, and usually consist of individual items--for example single slides or overhead transparencies--which may be used separately or in conjunction with others to form a sequence.

2.1.1 Overhead transparencies (OHT)

The survey showed that the OHT is the av aid most frequently used. All the OHT used were designed by, and, in most cases, made by the teachers. Some had given their designs to a graphic artist for production as transparencies.

2.1.2 Photographic 35mm slides

Over half the staff use slides, which are next in popularity to the OHT. Some staff created their own slides by photographing the original situation. Some obtained their slides from commercial or other sources, or have had copies made of the slides of other teachers. Slide showings are commonly accompanied by a vocal commentary.

2.1.3 Video recordings

This device is used by six of the staff to provide short sequences of information which are inserted into a lecture. Such sequences are used to analyse role-playing exercises or to demonstrate interviewing techniques; to illustrate processes; or to create atmosphere--for example in 'on-location' recordings of the work of a mobile librarian. These sequences have usually been recorded for the teacher by technical staff, but all could have been done by the teachers themselves using the lightweight video portapak equipment currently available. Only in one case had the teacher had a complete video programme produced.

2.1.4 Audio recordings

These are usually in the form of audio cassettes and are used by only 25 per cent of the teachers. Like the video recordings mentioned above, audio recordings are often short sequences of information and not complete programmes. They are used to illustrate different styles of reading, including poetry, as well as musical sounds (stereophonic as opposed to monaural recording), to record talks by librarians from outside the teaching institution and to complete lectures by teachers for student revision purposes. They are made either by the teachers themselves, or by technical staff.

2.1.5 Real objects

Real objects are used by teachers where these are appropriate. Among those used are an early hand-printing press, sets of library plans, the architectural version of LEGO called MODULEX, and a wide variety of audio-visual, reprographic and computer equipment and materials.

2.1.6 Tape slide programmes

Only two of the teachers had produced tape slide programmes for teaching purposes. The programmes covered basic information that had to be repeated in a variety of teaching situations.

2.2 Externally produced av programmes

These are usually complete programmes recorded in the form of video-cassettes, films or tape slides. They are produced by commercial publishers, teacher institutions or other agencies, and are either purchased or borrowed.

Thirteen of the teachers made use of such complete audio-visual programmes, films, commercially available or off-air copied video-cassettes, and tape slide programmes were the most popular formats. A common complaint was that this type of material is rarely usable in exactly the form in which it is produced, and that it often does not completely fulfil the specific needs.

In every case, teachers used such programmes only after a verbal introduction or followed up by an evaluation or review of the content. While such programmes do stimulate student interest, all agreed that they should never be used without carefully relating them to the specific teaching situation.

2.3 Conclusions

Discussion with teachers confirmed that the following factors are important when considering the use of av aids in teaching programmes:

The specific communication need determines the appropriate design and format chosen by the teacher.

The technical skills of the teacher or the accessibility of experienced help, combined with the availability of materials and equipment affect the production of aids.

The need for cost-effectiveness in terms of time and money imposes restrictions on the type of aid to be produced.

The most useful av aids are those which are cheap and simple, and can be produced by any teacher. Special technical staff and facilities are often not available.

2.3.1 Overhead transparencies and slides. These are easily produced to fit specific needs with the minimum of materials and equipment. The OHT can even be made with everyday materials if necessary. Equipment for the production of these aids should be available in every teaching institution. They are also inexpensive to produce and can be used many times in a variety of teaching situations. Both formats have proved to be invaluable ways of communicating information and their use should be adopted by all library and information science teachers.

2.3.2 Audio recordings. These are also simple to produce and the equipment and materials are widely available. Many teachers would find these a useful addition to their teaching programmes. The supporting cassettes or tapes are reuseable when the original recording has outlived its usefulness and the frequent purchase of new materials can thus be avoided.

2.3.3 Tape/slide and video recordings. These have a more limited value. Both formats require fairly complex and comparatively expensive equipment, which is not available everywhere. Considerable expertise and experience is required on the part of the producer-- abilities which not all teachers can be expected to possess or acquire. Their production is also very time-consuming. Staff time for planning, writing and technical production may involve as little as thirty or as many as two hundred or more hours. Such programmes need to be heavily used to justify the expenditure.

Areas where video recording can be cost-effective include the use of video portapaks to record short sequences of information where movement is essential and the use of video-cassette recorders to record transmitted television programmes or to make copies of film or tape/slide programmes.

3. THE USE OF AV AIDS IN SELECTED AREAS OF LIBRARY AND INFORMATION SCIENCE TEACHING

This section gives examples of the ways in which the teachers included in the survey use av aids. It is not an exhaustive list of the aids used in the College of Librarianship, Wales, but is intended to be suggestive.

3.1 Bibliography

3.1.1 Physical bibliography. Large numbers of slides are used to illustrate the aesthetics of typography and binding styles, to show sequences of process in typesetting, printing and papermaking. A complete video programme on binding techniques has been produced by the teacher and made in the bindery of the nearby National Library. A number of commercially produced films on the invention and early history of printing are used as stimulation and discussion documents.

OHTs are used to illustrate processes, for example the printing down of a photographic negative on to a printing plate. A hand-printing press and a range of typefaces and equipment are used for demonstration and student practical work.

3.1.2 Sources of information. OHTs are used to structure the lectures, that is to list the main topics or points covered. OHTs are also used to identify the specific features of encylopedias, dictionaries, bibliographies, etc. These lists of headings enable the teacher to cover all points and aid the student in his note-taking. Full sized examples follow. Commercially produced audio-visual programmes on bibliography are given in the reading list but are not used in the course as they are not found specific enough.

3.2 Management

3.2.1 Library planning. OHTs are used to show the structure of each lecture. Slides are used to show library exteriors and interiors and special features and are accompanied by a vocal commentary. Self-instructional packs of slides with accompanying handouts are also provided for student use. Some slides have been produced by the teacher, others were obtained by gift or purchase. Tape/slide programmes produced by libraries and films on architecture and architects are used as background information. Modulex is used in practical sessions by students as is a large collection of library plans.

3.2.2 Public relations. Due to the problems of displaying a collection of publicity posters during lectures a teacher had them photographed on to slides. These are faster and easier to use with an oral commentary. Because this sequence is used repetitively the teacher has now made it into a tape/slide programme.

Simple video sequences are used to record students and others engaged in a communications situation for later analysis. This, the teacher feels, not only illustrates the problems of good communication but shows the advantages and disadvantages of the recording medium as well.

3.2.3 Problems of library services in rural areas. Here slides are used to show the geographical features of the area, the problems faced in running a rural library service and the solutions to these problems.

Encyclopaedias

1. Types
2. Authority
3. Treatment
4. Revision methods
5. Arrangement
6. Bibliographies
7. Presentation
8. Role in reference work

General Dictionaries

Secondary Features:-

a). etymology/derivation

b). abbreviations

c). foreign terms/phrases

d). synonyms/antonyms

e). misc. information, inc.

biographical

geographical

quotations

illustrations

3.2.4 Management of learning resources. OHTs are used to indicate the structure of the lectures. Slides are used with oral commentaries to discuss the planning of resource centres and to introduce students to various types of multi-media. Pre-recorded audio-tapes are used in two ways. The first, using comments by librarians, stimulates student discussion of the correct attitudes towards resource-based learning. The second shows good and bad interview techniques for evaluation by students.

3.2.5 Medical health and welfare librarianship. Slides are used to illustrate hospitals, hospital libraries and library services to housebound readers. As the College is situated in a rather remote part of the country it is not usually possible for the student to visit such services. A number of tape/slide programmes made by hospital libraries are also used in this course to stimulate discussion.

3.2.6 Reading and readers. This course uses a number of pre-recorded audio-cassetes made by the teacher. These illustrate different musical styles and forms, poetry-reading techniques and the differences in style between the author of the work and the professional actor reading it. These recorded sequences, the teacher feels, overcome the imposition of the printed page and enable a better understanding of the subject.

Video sequences sample children's television programmes, or news reporting, for study purposes.

3.2.7 Aspects of management. OHTs are used to show management systems, staffing structures, relationships between library processes and library services, and flow charts. These encourage students to explore the situation with the teacher. Commercially produced management films are used selectively, to stimulate students to think, talk and analyse. A series of radio broadcasts on public libraries, suitably edited, are also used to stimulate discussion. The teacher is able to stop the tape where necessary to obtain students reactions.

3.2.8 Staff training. OHTs are used to indicate the structure of lectures and to list the main points of topics such as the basic principles of supervision, types of training, training priorities and making budgets. Films and tape/slide programmes from other sources are used to stimulate discussion and to enhance role-playing exercises.

3.3 Children's librarianship

Slides are used as support material to provide a greater insight into the background and character of children's authors. They are also used to illustrate themes and forms of children's literature such as violence, comics, etc., and to show book illustrators and their work.

When children's authors visit the College, they are interviewed and a video recording is made for future teaching purposes.

3.4 International and comparative librarianship

Library situations and related social factors in other countries are shown by video recordings, films, tape/slide programmes from outside sources and slides made by the teacher and others. Without these materials, the teacher believes it would be impossible to teach this course effectively.

3.5 Information technology

3.5.1 Audio-visual studies

OHTs are used to show the structure of the lectures, and also to list key points in such processes as the stages in making a tape/slide programme; or to illustrate specific concepts impossible to convey in words such as specific lettering styles and sizes for OHT production, or the position of tracks on recorded tapes, or the use of a volume unit meter on a tape recorder; or to explain diagrammatically situations such as the ideal conditions for audio recording.

Students are given a full set of paper copies of all OHTs used in the course for note-taking and revision purposes. Examples of some of these overhead transparencies are given in this document.

A wide range of slides have been taken during library visits. These are used in sequences with oral commentary to illustrate the use of audio-visual materials and the necessary equipment and facilities. Slide sequences are also used to teach simple photography.

One tape/slide programme has been made to introduce students to the range of audio-visual materials available to the librarian. This has been used repeatedly and has been commercially published.

Film, audio and video sequences are used as inserts in lectures, and commercial film programmes are used to stimulate discussion. Video sequences are used to illustrate photographic techniques such as the copying of documents, and also the operations of various types of audio-visual equipment, before the student carries out these tasks in a workshop situation. It would be difficult to teach this course effectively without many av aids and equipment.

3.5.2 Reprographics

Video sequences are used to show the encounters of library users with microfilm and equipment. Analysis and discussion follows. Slides are used to replace objects and equipment that cannot be passed round or to show situations that it is impossible for students to visit. A range of reprographic equipment is used for demonstration and for student workshops.

A tape/slide programme made in another country was purchased and a new commentary more appropriate to local needs was added to the slides by the teachers.

3.5.3 Computers

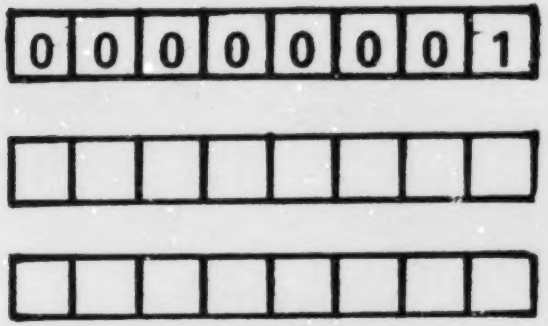
OHTs are used to help students understand computer printout and computer languages. Because of the legibility problems inherent in making a same-sized copy of computer printout on to plastic and showing it as an OHT, one teacher has had limited amounts of printout, sometimes even one line of commands, photographically enlarged to the correct size on to OHT acetate. While the teacher agrees that this information could have been presented as a paper handout, he finds it easier to use the OHT in a lecture situation, as he can point out exactly the details to which he is referring. OHTs are also used to show library applications of the computer, and the workings of a computer at a conceptual level, for instance how the computer deals with an instruction and deciphers it. Examples of OHTs in this subject area are shown in full on the following pages.

Slides are used to show computer equipment in library use. These are found to be much more helpful than an oral description. Video sequences are made of equipment demonstrations for later showing.

```
? DISPLAY SETS
SET  ITEMS  DESCRIPTION
  1     10  E8-E10 AU=FOSKETT
  2   4418  CLASSIFICATION
  3  32120  YR=75
  4   1104  CATALOGING
  5   5264   2 OR 4
  6      3   1 AND 5
```

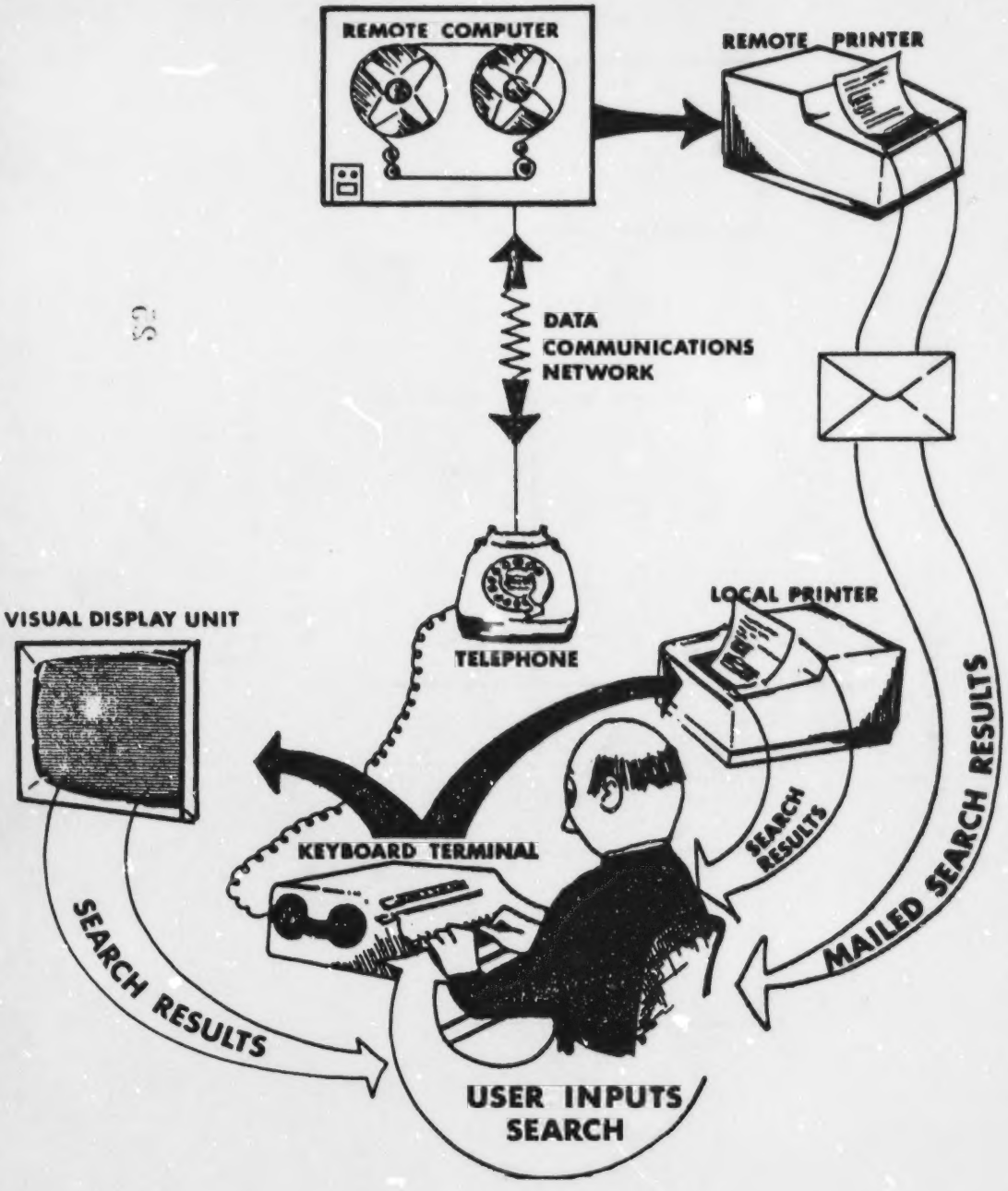
INSTRUCTION 1

WORD INSTRUCTION

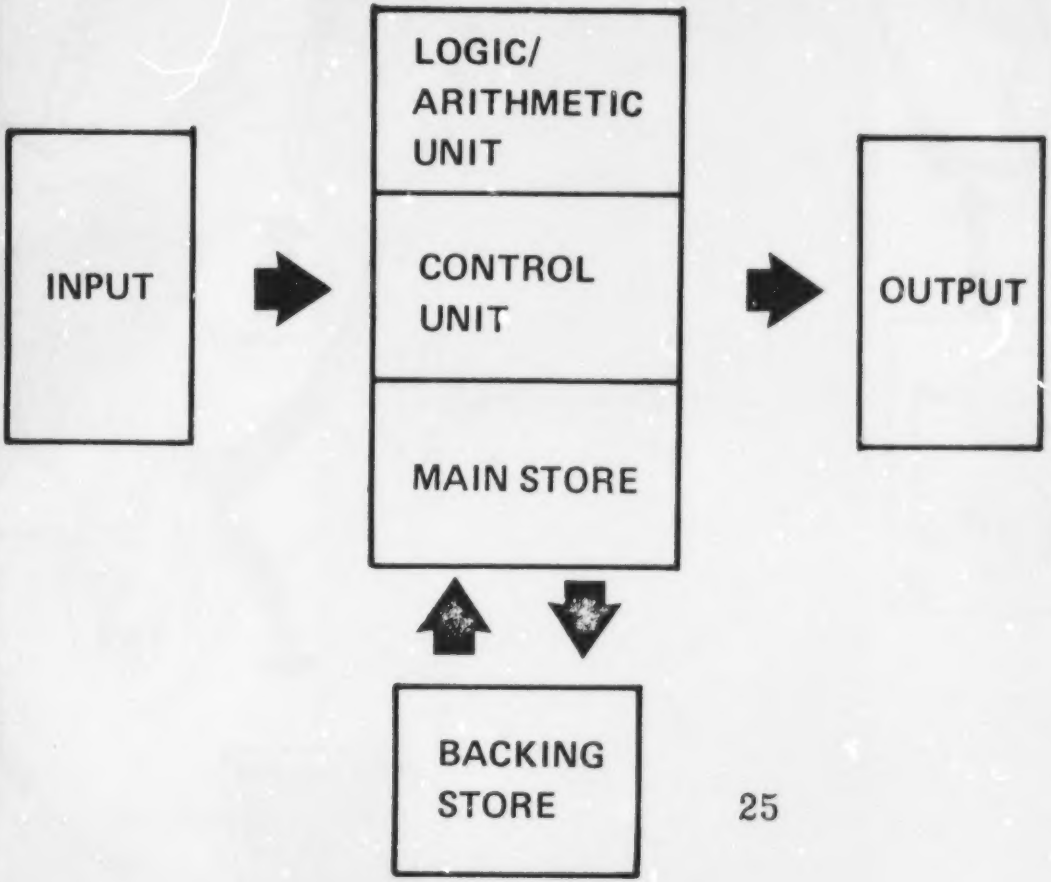


FUNCTION; Adds contents of memory to Register A
Adds 3 to Program Counter

A TYPICAL ON-LINE SYSTEM



BLOCK DIAGRAM OF A COMPUTER



3.6 Information retrieval

3.6.1 Cataloguing and classification. OHTs, both pre-prepared by the teacher and created as required during the lecture, are used to show basic catalogue entries. Overlays are used to identify parts of the entry. OHTs also show variations on standard entries, MARC, AACR revisions, and demonstrate citation order, basic classification principles, characteristics of division and details of classification schemes and their peculiarities. OHT copies of book title pages are shown, while students prepare catalogue entries from them. This is cheaper than providing each student with a handout. Examples of OHTs in this area are given on the following pages.

3.6.2 Index languages and information systems. OHTs are used to indicate the structure of the lecture and also to encourage evaluation of various information systems by comparing similar aspects of different schemes. Major characteristics of each information system can be listed, either separately or simultaneously. Qualities of index languages can be compared and properties of experimental results shown. Students are given paper copies of the various OHTs used. Reduced examples of some of these OHTs are shown on the following pages.

Slides are also used to compare and evaluate the properties of indexes, including their legibility and readability. The teacher feels that these slides could now be converted to OHTs for maximum effectivenss. Another teacher in this area uses OHTs showing flow charts to demonstrate stages in indexing and searching.

4. STUDYING THE TARGET AUDIENCE

4.0 Introduction

Having decided to introduce av aids into the teaching programme, the teacher must first consider the target audience. The most effective av aids are those which are designed with the specific needs and abilities of a particular group in mind. As every target audience is different there are certain factors which need to be determined in each case.

4.1 Levels of literacy

4.1.1 Print literacy. The ability to read or to be 'print literate' is the result of a prolonged educational process requiring practice, experience and access to printed materials. The ability to fully understand what one reads is a further extension of this process.

4.1.2 Pictorial literary. It would appear to be obvious that audio-visual materials which depend on the natural senses of sight and hearing, would greatly aid communication, particularly in societies where there is a high level of illiteracy or semi-literacy. Indeed there is a widely held assumption that pictures are a form of transcultural language that everyone understands and can interpret. In fact, we cannot assume that this is correct, for the understanding and interpretation of audio-visuals depend on many variable factors.

Pictorial illiteracy is almost as widespread as print illiteracy. The main difference between the two is that print literacy is the result of a conscious effort to acquire this skill through an educational process and pictorial literacy or the ability to interpet pictures is for the most part a natural process.

Pool, Geoffrey F

Coalville sphere of influence survey : report / [by] G.F. Pool. - [Leicester] ([c/o Charles Keene College of Further Education, Painter Street, Leicester]) : [The author], 1973. - [11], vii [i.e. ix], 156 [i.e. 205]p, 36 fold leaves : forms, maps ; 30cm.

Limited ed. of 100 copies. - 'The report of a survey centred on the town of Coalville to the North-West of Leicester to determine its spheres of influence, conducted by the Police cadets of the Leicester and Rutland constabulary in the academic year 1971-72' - p.[3].

ISBN 0-9504527-0-x Sp : Private circulation
(B75-25182)

Pool, Geoffrey F

Coalville sphere of influence survey : report by G. F. Pool. 1973.

Published by the author at Charles Keene College of Further Education, Leicester.

〈 + annotation 〉

MARC input:

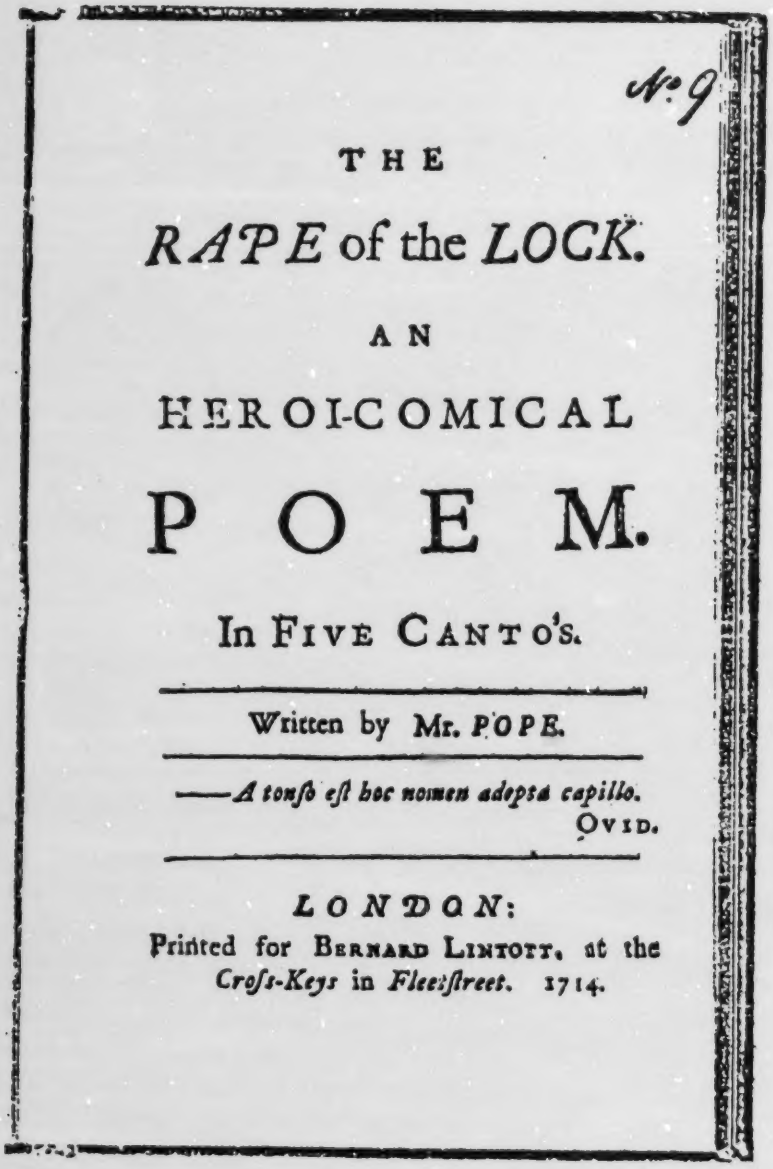
641.6 65
Norman Ursel
Chicken feed a collection of chicken recipes by Ursel Norman illustrated by Derek Norman
London Fontana 1979

Some possible outputs:

641.665
Norman, Ursel
Chicken feed : a collection of chicken recipes / by Ursel Norman ; illustrated by Derek Norman. - London : Fontana, 1979.

NORMAN, Ursel. *Chicken feed : a collection of chicken recipes.*
Fontana, 1979. 641.6

Chicken feed. (Norman, U.) 1979 641.6



No. 9

THE

RAPE of the *LOCK.*

AN

HEROI-COMICAL

POEM.

In FIVE CANTO's.

Written by Mr. POPE.

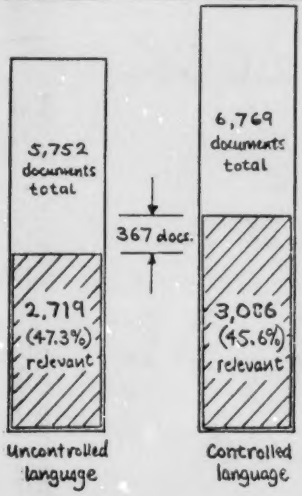
——*A tonſo eſt hoc nomen adepta capillo.*
OVID.

LONDON:
Printed for BERNARD LINTOTT, at the *Croſs-Keys* in *Fleetſtreet.* 1714.

INDEX LANGUAGE, INDEXING, AND INDEXES

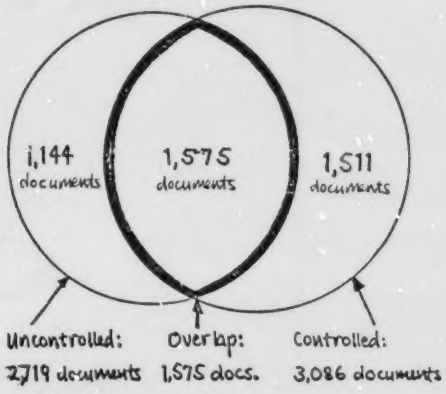
UNCONTROLLED OR CONTROLLED INDEX LANGUAGE?

RETRIEVAL CAPACITY OF UNCONTROLLED AND CONTROLLED INDEX LANGUAGES



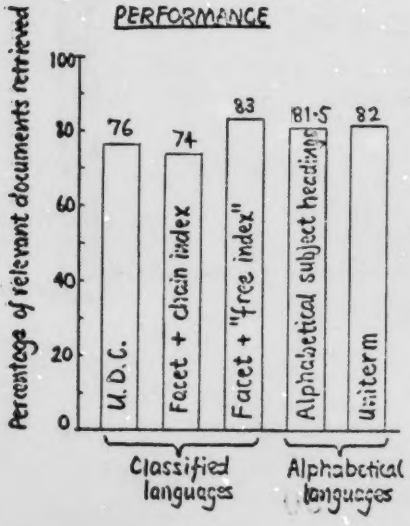
RETRIEVAL OVERLAP FOR UNCONTROLLED AND CONTROLLED INDEX LANGUAGES

Distribution of the relevant documents



CLASSIFIED OR ALPHABETICAL INDEX LANGUAGE?

CRANFIELD-1: INDEX LANGUAGE PERFORMANCE



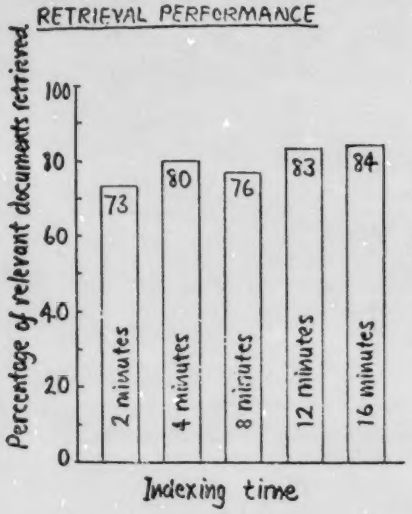
WHAT CAUSES RETRIEVAL FAILURES?

Failure analyses for three retrieval experiments

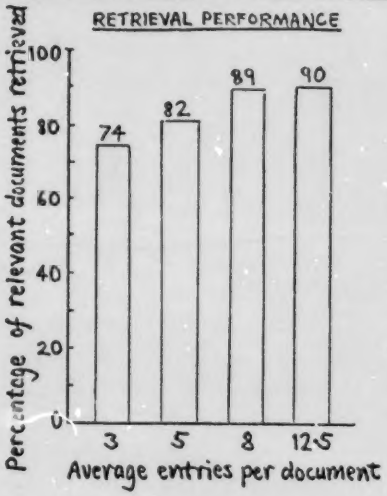
Causes of failure	Percentages of failures: Medlars		Cranfield 1		Western Reserve University	
Indexing	25	58	60	77	25	76
Searching	33		17		51	
Index language	20		6		23	
Other	21		17		—	

INDEXING PROPERTIES AND RETRIEVAL PERFORMANCE OF INDEXES

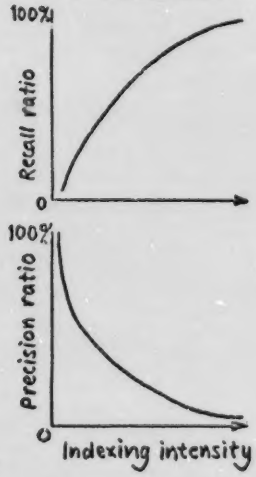
CRANFIELD-1 : INDEXING TIME AND RETRIEVAL PERFORMANCE



CRANFIELD-1; INDEXING INTENSITY & RETRIEVAL PERFORMANCE



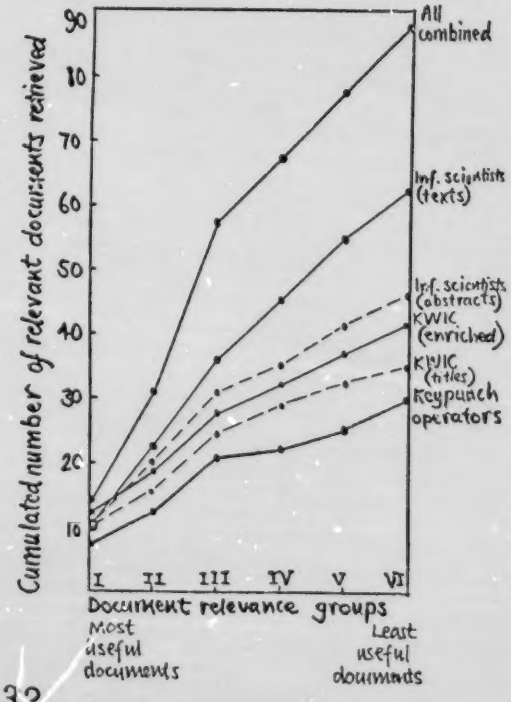
INDEXING INTENSITY AND TRENDS IN RETRIEVAL

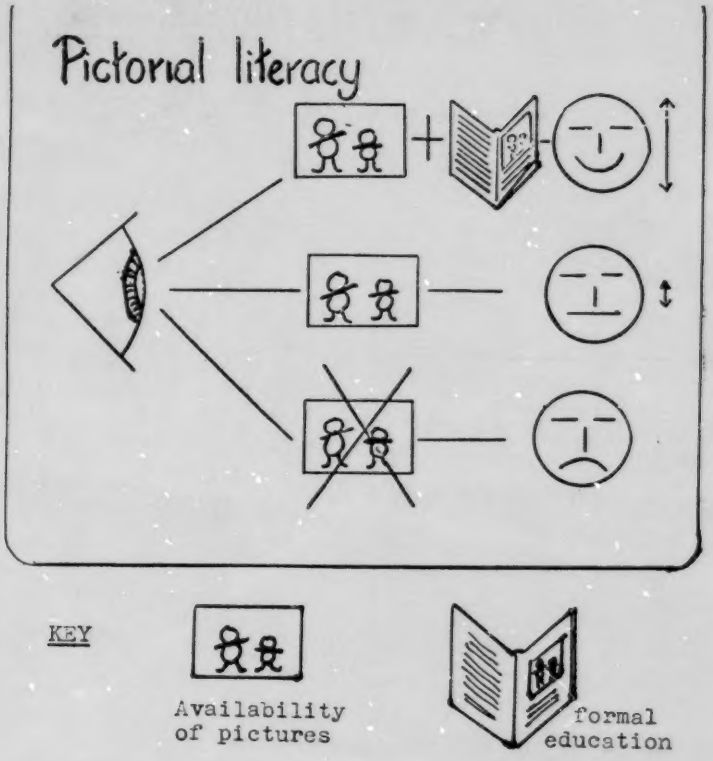


NB. Recall ratio = percentage of relevant documents retrieved

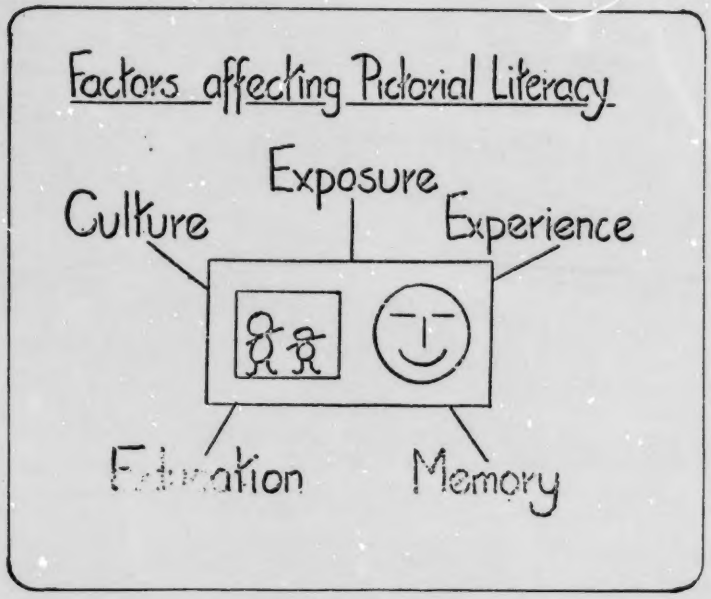
Precision ratio = percentage of the retrieved documents which was relevant to the request

A SYNTHESIS: INDEXING SOURCE + INDEX LANGUAGE + INDEXER





While pictorial literacy develops in proportion to the amount of pictorial stimulation the individual receives and is not connected to print literacy, formal education can improve the individual's ability to read pictures. The students in library and information science courses as well as the non-professional staff employed in libraries will all be both print and pictorially literate to a considerable degree, but there may be significant differences in pictorial skills between people at the same level but from different cultures.



We only 'see' when we understand what we see. Experience and memory are deeply involved in our reading of pictures. And as experience of people varies from one culture, environment and country to another, it follows that people from different parts of the world will have a varying perception of reality and varying abilities to interpret the information in a picture. Also because of language differences they may in certain situations have difficulties in explaining what they see.

4.1.2.1 Design of visual material

How does pictorial literacy affect the design of visual elements used in library and information science teaching?

Andreas Fuglesang, in recent experiments in rural Africa, showed villagers the same simple pictures in four different forms to determine their recognition of the visual content. The pictures involved everyday happenings in their own village such as a woman walking with a basket on her head. The results were most interesting.

Form of picture	Recognition rate
Line drawing	4%
Silhouette	8%
Photograph with normal background detail	31%
Photograph with background detail blocked out	57%

These findings have helped determine the following criteria which should be used when designing visuals for any audience. Observance of the criteria should assist comprehension when the visual aids are presented before the multinational audiences that are frequently found in schools of library and information science. Therefore:

make simple slides with as little distracting background detail as possible;

ensure that each visual has one clear message only;

ensure that each visual includes clues as to depth, size and perspective;

include at least one major recognizable object in the visual to which the viewer can relate any new visual information shown. This relationship can be reinforced by the teacher's commentary;

the use of colour does not appear to have any educational value except where it is critical to the learning process. It is to be preferred where appropriate.

4.1.2.2 Value of visuals produced in other countries

Audio-visual materials produced in one country have to be examined carefully for appropriate level of pictorial literacy before they are used elsewhere. It cannot just be assumed that such materials will prove relevant or will be fully understood in another environment.

4.1.3 Aural literacy. Some audio-visual materials contain both pictures and sounds, while some contain one or the other. Aural literacy develops in a similar way to pictorial literacy, for although we can hear the sound, we only understand it when we can associate it with its original source.

Sound, it has been suggested, jumps the illiteracy barrier, and there is no doubt that audio recordings have proved to be both successful and important in a variety of communication situations in developing countries where there is invariably a strong oral cultural background. Audio recordings are most effective when designed for a specific group.

4.2 Level of treatment

The way in which the information is to be presented must be considered with the target audience in mind. The approach adopted for a group of heads of library schools may be quite different from that for a group of undergraduates.

4.3 Level of pre-knowledge

It is necessary to estimate what the target audience may already know about the subject. An audio-visual aid or presentation should build on existing knowledge, and should not repeat what the audience already knows. At the same time it should not be at such a high level that the audience cannot relate to it. If there is doubt about the pre-knowledge of a target audience, the teacher should determine this by discussions with representatives of that target group.

Wherever possible, an av aid should aim to stimulate interest and enthusiasm. A boring aid is no more effective than a boring lecture! Indeed recording a boring lecture on to video-tape is a gross misuse of the medium.

4.4 Language identification

The language the teacher uses in presenting the information is important. Especially in recorded commentaries this should be kept as simple as possible. A commentary is a one-way conversation with the target audience. Therefore oral or recorded commentaries should be presented as though the narrator is speaking to the audience and not writing to them. Keep the language as basic as possible, with the use of everyday words and short sentences.

Teachers of library and information science, like many other professionals, tend to use many phrases or abbreviations peculiar to the profession. Do not use these jargon phrases in commentaries or scripts, for it is not certain that all members of the audience will be familiar with them. If it is necessary to use abbreviations, these must be explained beforehand e.g. 'The College of Librarianship, Wales, or CLW (pronounced Cloo) as it is known...

To help the audience grasp a recorded commentary, try to have this recited by a good speaking voice representative of the target audience and using the same accent and manner of speaking. A voice with an unfamiliar accent, with a boring tone, or using a style of language foreign to the target audience can impede effective learning. These can lead to a serious loss of attention by the audience and to negative amusement. The audience should laugh with the commentator, which is good, but not at him, which is bad.

4.5 Attention span

The attention span of a target audience must be estimated as accurately as possible before preparing an audio-visual programme. Experience would suggest that the following lengths of time are acceptable for educational audio-visual presentations:

OHTs and slides	only as long as they are relevant
Audio recordings	up to 30 minutes
Talk over slide sequences	up to 30 minutes
Tape slide programmes	up to 13 minutes
	up to 20 minutes with movement and different locations
	up to 13 minutes where still visuals are used

4.6 Conclusions

If av aids are to be appropriate the teacher or producer must understand the abilities and needs of the target audience. The aids can then be designed to meet these requirements and evaluated to determine their effectiveness.

The skills required to plan such aids should not present teachers with any difficulties, for they are basically very similar to those required for designing a lecture or sequence of lectures.

5. CHOOSING THE CORRECT FORMAT

5.0 Introduction

For the most effective presentation of particular types of information, it is important to choose the correct audio-visual format. Each of the formats proposed is the best for certain purposes. Several factors will determine the choice of format for each particular aid required:

Content
Listening/viewing conditions
Flexibility of use
Costs of production
Ease of production
Equipment required

An examination of each format in terms of these headings will guide the teacher in making an appropriate choice.

5.1 The overhead transparency

5.1.1 Content

As has been mentioned, many teachers use the OHT to indicate the structure of their lectures. An example, on eight OHTs, for a lecture on 'planning for media development' is given below.

If overhead transparencies are mounted in cardboard frames, the teacher can write extra notes or details relevant to the transparency on the frame. When the OHT is projected, both the audience and the teacher see the content of the OHT. The teacher can also see the information on the frame, but the audience will be unaware of this extra material. The teacher can thus sometimes work without separate lecture notes.

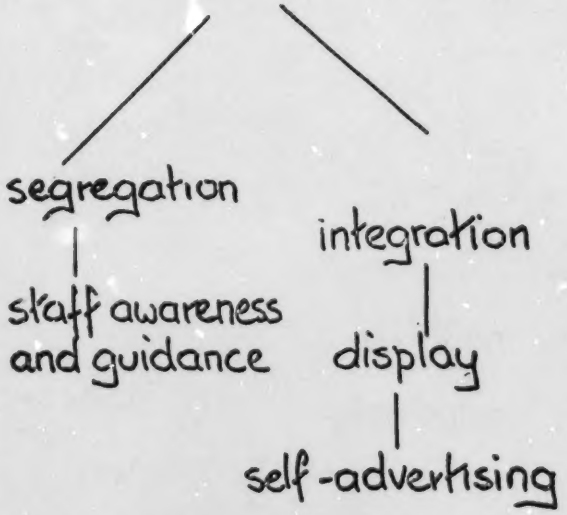
In general, the OHT is appropriate for word-based information, and the slide for pictorial information. Where appropriate, the two formats can be used together effectively. The OHT is best used for words, lists, statistics, charts and diagrams. If the teacher has access to photocopying equipment which makes copies on acetate or plastic sheets as well as paper, then OHT copies can be made of the title pages of books, diagrams and line illustrations.

1

Attitude to multi-media
Rationalisation
Exploitation
Staff education
Staff training
User education
User familiarisation
and/or training

2

Attitude to multi-media.



3

Rationalisation

Aquisn - prodn	Use
OHTs	OHTs & copies
slides, filmstrips	slides
audio tape, " disc, " cassette	audio cassette
film - 8 & 16mm, video tape, video cassette	video cassette
video disc	video disc

standardisation of hardware

4

Exploitation - Public

Lending

User use

Staff example

User training

by invitation

or opportunity

User training as a condition of loan.

Reference

Staff use on behalf of user/ user use

5

Exploitation - Academic

School	Tertiary
User use	User use
User training	User familiarisation
Library monitors	optional/ compulsory
compulsory?	

6

Staff Education

1. Convincement of value of and need for audiovisuals
2. Developing interests
3. Planning for multimedia development

Staff Training 7

Methods:-

1. Self-instruct workshop with detailed notes
2. Self-instruct workshop with simple objective tests
3. Self-instruct workshop with a/v programmes
4. Workshop with simple objective tests + instruction

User Education and Familiarisation. 8

Who does it ?

What does the user need ?

1. Awareness of library, staff and outline of services
2. Range of materials & services
3. Familiarisation in use of catalogue, bibliog. aids and equipment.

U2

If the copier is of sufficently high standard, readable results can be obtained from photographic illustrations. However, producing high quality photographic illustrations for the OHT is an expensive process and requires access to equipment and expertise which most teachers will not have. In addition, cost-effectiveness must be considered, and photographic slides are much cheaper to produce than photographic illustrations for the OHT.

5.1.2 Viewing conditions

The OHT is best presented in normal daylight conditions, and can remain on the screen for as long as it is relevant to the lecture. Paper copies of OHTs can easily be made on a photocopier and distributed to students for them to add notes to, and to keep for revision purposes. When a student is given a copy of an audio-visual aid this 'teacher's aid' also becomes a 'student's aid'. The practice of distributing copies of the most important OHTs used in a lecture sequence, should be considered where this is economically feasible. On certain types of photocopiers with reduction facilities it is possible to produce eight OHTs on one sheet of A4 paper. If copies cannot be prepared for individual students, the teacher should ensure that at least one complete set of copies is placed in the library for review purposes.

This is the only av aid format which can be presented effectively in normal lighting conditions. Experience suggests that this encourages dialogue since students tend to respond much more freely in a lit room. Using av aids in darkened conditions encourages students to concentrate but effectively stops them from participating in discussions or asking questions until normal lighting conditions are restored. As a rule, if teachers wish to encourage discussion during a presentation the OHT should be used. If no discussion is required a format which is presented in the dark may just as well be employed.

5.1.3 Flexibility

Although OHTs ought to be made with a specific target audience in mind, they can sometimes be used in a variety of teaching situations by altering the oral commentary to meet the special needs of each audience.

5.1.4 Cost of production

The OHT is inexpensive to produce and requires only simple materials that can be purchased in most parts of the world, or can be easily improvised if necessary. The time spent in making an OHT can vary from ten to thirty minutes, depending upon the teacher's experience and the complexity of the information to be recorded. Once produced, and found by evaluation to fulfil its aim, the OHT normally outlasts the need for it, since the content is apt to be out of date before the OHT wears out. The materials are re-usable to a certain extent. If pens with water soluble ink are used, acetates can be cleaned and re-used, as can the frames.

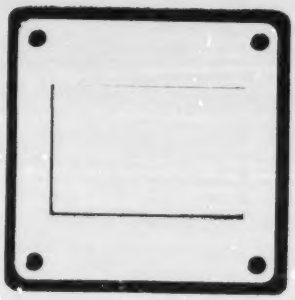
5.1.5 Ease of production

Teachers are able to produce technically competent and effective OHTs themselves with only basic skills.

5.1.6 Equipment

The only essential piece of equipment is the overhead projector itself. It appears that these are available in most institutions of higher education throughout the world.

5.2 The photographic thirty-five millimetre slide



5.2.1 Content

The slide is an essentially pictorial medium and can be used to show original photographs created by the teacher or copies of material from books, other print-based documents, pictures, photographs or other slides as well as specially designed captions and graphics. (Captions are title or similar word-based slides, while graphics are slides which normally include word and pictorial material). However, because slides can deteriorate if they are projected for too long, they do not lend themselves to word-based or graphic information except that of the simplest kind which can be absorbed quickly. Word-based information is in general best presented in OHT format. Some simple word and graphic slides can, however, be used in a slide sequence where this is desirable--the title and credits of a programme, for instance, or a simplified chart, but they should be kept to a minimum. It is a good idea where a number of word-based slides have to be used, to include their content in a paper handout that can be given to the students before or after the presentation.

5.2.2 Viewing conditions

For group presentation, slides almost invariably need to be projected in darkened conditions if a reasonably large picture is to be obtained on the screens. This induces student concentration but little or no interaction. Individual slides normally should not be projected for longer than sixty seconds or for less than four seconds, the duration depending on the pictorial content and the length of the teacher's commentary. A sequence of slides presented with oral commentary should not last for more than thirty minutes without a break.

5.2.3 Flexibility

Slides are very flexible and once a teacher has built up a collection, a wide variety of sequences can be quickly prepared for different audiences and teaching situations. Such a collection needs to be constantly added to, and out-of-date material should be discarded as necessary.

5.2.4 Cost of production

Slides are inexpensive to produce after the teacher becomes accustomed to taking a camera and electronic flash unit along when visiting potential sources of appropriate photographs--library visits, conferences, tours abroad, etc. Special visits for the purpose of taking photographs can make the cost of individual slides very expensive. It takes only a minute or even less to take a photograph, although some photographs will need to be prepared beforehand.

5.2.5 Ease of production

Once a teacher has mastered the technical use of the camera which should take less than one hour, acceptable slides can be produced simply. Superior slides come with further experience and increasing understanding of the effective composition of photographs.

5.2.6 Equipment

More equipment is required for slide production and presentation than for OHTs. A good single lens reflex camera, plus a small electronic flash unit is necessary for slide production of acceptable quality. A slide projector, preferably of the automatic type and a screeen of at least 1.5 square metres must be available for slide presentation to groups.

5.3 Audio recordings

5.3.1 Content

Audio recordings are used in library and information science teaching primarily to capture orally based sequential events such as lectures, discussions, interviews, reminiscences of those connected with the profession, comment by librarians, role playing exercises for later evaluation, staff training sequences, examples of different types of literature and literary styles, stories and storytelling techniques. They may also be used to record music and sound effects.

5.3.2 Listening conditions

Playback is usually done under normal lighting conditions. Discussion can take place any time by stopping the audio-tape as required. A maximum listening time of thirty minutes is recommended for group presentation.

5.3.3 Flexibility

Audio recordings are usually sequences of variable length used as inserts in a lecture. They are flexible in that they can be used whenever it is appropriate, but the content cannot easily be rearranged to suit different needs. Rearrangement by editing is possible but time consuming.

5.3.4 Cost of production

Sound recordings are inexpensive to produce. Both open reel and cassette tapes are inexpensive and re-usable many times for many different recordings. Many sound recordings are simply recordings of events, and for these little preparation time is required. However, for interviews, oral history recordings, and staff training sequences, research and preparation time is essential and some recordings need to be scripted beforehand.

5.3.5 Ease of production

Recordings made on audio cassette recorders are remarkably easy to make. The use of an open reel tape recorder to produce high quality recordings requires only basic skills that any teacher can quickly master.

5.3.6 Equipment

The simplest equipment is relatively inexpensive, and battery/mains operated audio-cassette recorders are available in virtually every corner of the world. Where higher quality recordings are required open reel tape-recorders are necessary and these are more expensive to purchase and increasingly hard to obtain.

5.4 Tape/slide programmes

5.4.1 Content

Tape/slide programmes are widely used in librarianship and library education because many librarians regard this format as the simplest and most economical one for complete programme production. The skills required can be gained quickly or are already possessed in part through previous experience in making slides and sound recordings. It is also considered to be a medium in which the librarian can easily achieve professional production standards.

Unlike the formats covered so far, the tape/slide format is invariably used to make a complete programme to illustrate a specific topic. It constitutes a complete teaching package. Pictures and words are presented simultaneously and in synchronization. The tape/slide format is ideal for presenting a sequence of information where movement is not essential to the learning process.

As has been stressed in Slides (5.2) above, slides showing words should be kept to a minimum, and in a tape/slide programme, should be restricted to captions, with the use of an occasional graphic if necessary. Words are not pictures.

Tape/slide programmes can be used in user and student education, staff training and communication, as documentary programmes (for example, 'The Visual Aspects of Public Relations', or 'The British Library'), as introductions to major bibliographic services ('Science Citation Index'), or as self-teaching programmes ('How to make a tape slide programme').

5.4.2 Viewing conditions

Since the tape/slide programme should be projected in a darkened room, discussion is not encouraged during the presentation. Although in theory the programme can be stopped at any point if required, this is not recommended because of the problem of keeping the pictures and words in synchronization. The audience cannot easily make notes during the presentation (although some will try and should be discouraged beforehand); therefore a handout should be distributed before or afterwards. This should review the key points of the programme and include the wording of any important captions or graphics used.

5.4.3 Flexibility

The tape/slide programme is the most flexible of the formats for complete programmes, as it is relatively easy to replace out-of-date slides, or update the commentary, without having to remake the entire programme.

5.4.4 Cost of production

Tape/slide programmes are relatively expensive to produce. Although they require little equipment in addition to that used for slide and audio production and presentation, the time taken by staff to write and produce a complete programme can be considerable and may vary, depending upon their expertise and the length and content of the programme, from 25 to as much as 200 hours. The materials required are relatively inexpensive, consisting of up to 80 slides and 2 recording tapes.

5.4.5 Ease of production

A number of supplementary skills are required in addition to those involved in slide production and audio recording. The major ones are those of planning, production and scriptwriting. No doubt, all these skills can be acquired by librarians and teachers but the successful production of tape/slide programmes is more demanding than the formats discussed earlier. In many cases, expert help will be sought from audio-visual technical staff.

5.4.6 Equipment

The equipment required is the same as for slide production and sound recording. Where programmes are to be automatically synchronized, a tape/slide synchronizer for use with an open reel tape-recorder or an audio cassette-recorder with built-in slide synchronization facilities will be required.

5.5 Video recordings

It is important that the video recording is seen as one of a range of av aids. There are those enthusiasts who believe that video can replace all the other aids and that other formats are no longer needed. This viewpoint is unacceptable, however. Simple aids that can be made by any teacher, using basic materials and relatively inexpensive equipment and which offer a wide degree of flexibility are often the most useful. The production of original video programmes requires expensive equipment which is not generally available, and requires production skills which can only be obtained through training and experience. These skills cannot be expected of all. Production is also costly in terms of staff time, and the medium is relatively inflexible. The use of video for every audio-visual need could be compared to using a jewel-studded golden hammer to crack a very small nut. For the foreseeable future, video simply cannot do what the simplest formats, the OHT and slide, can do.

5.5.1 Content

In general video recording should only be considered where movement is essential to the learning process. Video recordings are normally made in one of three different ways.

5.5.1.1 Studio based recording is normally used for the production of complete video programmes. They use a number of video cameras and require specialized equipment and skilled technical staff to undertake aspects of the production. Therefore this method is not covered in these guidelines.

5.5.1.2 Single camera portable video systems are now available in a number of countries. They are inexpensive in video terms, but in library and information science teaching terms are very expensive. However they are being used to create learning sequences where movement is essential and can be operated by a teacher without technical assistance. Therefore this method is included in this guide.

5.5.1.3 Video cassette recorders are becoming available in many parts of the world. They were originally designed to record commercially broadcast television programmes. Now they are also used to record information from a simple video camera. They will be considered with 5.5.1.2 above.

Video recordings consist of moving pictures and sound. They can be in black and white or colour depending upon the type of equipment available. Short sequences can be produced by the teacher to illustrate processes such as computer book

charging systems; to demonstrate computerized data banks; to record events of professional interest; and to record series of events such as the work of a mobile library service.

The use of equipment likely to be available can produce only acceptable results which will never be considered professional. This limits the use of such materials to audiences of librarians, and library and information science students. More general audiences in many countries will compare the techniques unfavourably with the broadcast television they see daily, and miss the message the teacher is trying to convey.

Video is misused when recordings consist only of sequences of still pictures, or worse 'talking heads', i.e. recordings of lectures or interviews not including visual sequences involving movement. This is not a cost-effective use of the format at present, nor does it exploit the particular capacity of video recording to show movement.

5.5.2 Viewing conditions

Video can be shown in normal room lighting provided strong sunlight is excluded. The recording can be stopped and restarted if discussion is necessary during the presentation. The playback equipment is bulky and heavy, and an electricity supply is necessary to power the television set and the video recorder. This limits its portability in a teaching institution. Several makes of wheeled trolleys now exist to help overcome this problem.

A video recording can be played back many times and provided it is stored in a temperate or air-conditioned climate, will last for a considerable time.

5.5.3 Flexibility

Video is not a flexible medium for teaching purposes. When using the basic equipment, editing the content is impossible. Specialized editing equipment is expensive and the process of editing time consuming. Therefore if a video sequence needs updating or revising it is easier to completely re-record it.

5.5.4 Cost of production

Lengthy staff preparation and production time as well as high equipment costs can make video production very expensive. Video production equipment is rarely used to full capacity in any institution other than a professional video production company. Certainly it is never used to capacity in a school of library or information science. Upkeep costs can be high, especially where the equipment is used by unskilled staff. Recording tape is re-usable once a sequence or programme is no longer required.

5.5.5 Ease of production

The video portapak and the video cassette recorder are quite simple to operate and should not present any problems to a teacher. Experience and familiarity with the equipment and a basic knowledge of photography, plus some critical television watching, should enable the teacher to produce acceptable video sequences.

5.5.6 Equipment

Video portapaks are battery operated and can be used to make video sequences anywhere without an electricity supply, although it is always better to use a mains electricity supply when replaying the information. The equipment is designed co be played back through a conventional television receiver--the type of television set that receives its pictures from its own television aerial--and is found in homes throughout the world. The camera and recorder can cost about one-third to two-thirds of the price of a small motor car, depending on whether the unit produces black and white or colour pictures. For teaching purposes black and white pictures are usually perfectly acceptable.

Video cassette recorders also play back through a television receiver and require a mains supply to operate. Small video cameras can be purchased to record live action on to the video cassette recorder, either in black and white or colour. Video cassette recorders are becoming cheaper as the volume of sales increases but still cost, with a camera, about the same as a portable unit.

5.6 Summary of formats

OVERHEAD TRANSPARENCIES

Information content	Viewing conditions	Audience participation	Backup material
WORDS NOT PICTURES			
Words-topic headings	Daylight	Interactive throughout	Paper copies of OHTs
- precis of subject - structures - statistics - definitions			
Charts			
Diagrams			
Limited pictures			

Limits	Materials costs	Equipment required	Production time	Standards
50 words per OHT	Acetates	Overhead projector	15-30 minutes handmade	Up to professional
No limit to display time provided relevant	OHT pens			
	Frames			
	Some re-usable			
	Inexpensive			

SLIDES

Information content	Viewing conditions	Audience participation	Backup material
PICTURES NOT WORDS			
Black and white or colour	Groups--blackout	Discussion afterwards	Printed handout
	Individuals--daylight		
Real things			
Copies from documents			
Charts) much Diagrams) simplified			
Cartoons			
Limited words, (captions, etc.)			

Limits	Material costs	Equipment required	Time required	Standards
Sequences required for complex visuals, diagrams, etc.	35mm colour or black and white slide film	Single lens semi-automatic 35mm reflex camera	Random slides 1 minute	Up to professional
4-60 seconds per slide	Inexpensive	Electronic flash unit	Shooting schedule 10 minutes per slide	
		Manual/auto slide projector		
80-100 slides maximum per sequence		Hand viewer or light box	Processing 7 days or longer	

AUDIO RECORDING

Information content	Listening conditions	Audience participation	Backup material
Sequential events, words and sounds	Daylight	Discussion during pauses in playback or after	
Lectures			Script where applicable
Descriptions			
Oral histories			
Literature			
Music			
Natural or man-made sounds			
Newsreels or staff communications			
Staff training exercises			

Limits	Materials costs	Equipment required	Time required	Standards
Factual 5-30 mins. Imaginative longer	Open reel and cassette tapes inexpensive Tapes re-usable	Open reel tape recorder Editing equipment or High quality cassette recorder Microphone	Planning: Scripting length X 50 Recording length X 3 Editing	Up to professional

TAPE/SLIDE PROGRAMMES

Information content	Viewing conditions	Audience participation	Backup material
Words, sounds black and white or coloured visuals Sequential events: Instructional Educational Documentary Recreational	Groups-- blackout Individuals-- daylight	Discussion after	Script or handout covering main points

Limits	Materials costs	Equipment required	Time required	Standards
Single projector programmes 12-14 minutes 80 slides Dual projector programmes up to 20 minutes Recreational programmes longer	Recording tape Slides Relatively inexpensive	Camera Recording equipment Slide synchronizer optional Automatic slide projector preferred	Planning 5 hours Shooting schedule 5-10 hours Photography and graphics 20 minutes per slide Scripting length X 50 Recording length X 3 Editing Synchronization single projector length X 3 Dual projectors length X 6	Up to professional

VIDEO RECORDINGS

Information content	Viewing conditions	Audience participation	Backup materials
Words, sounds moving pictures Sequential events Descriptions On location recordings Instructional Educational Local history Lectures with moving visual inserts Newsreels and staff communications	Daylight or subdued light	Discussion afterwards	Script or handout covering main points

Limits	Materials cost	Equipment required	Time required	Standards
5-30 minutes	Video tape Inexpensive Re-usable	Video portapak Open reel tape recorder	Planning 1-5 hours shooting schedule length X 10 Scripting length X 50 Photography length X 5 Sound recording if separate length X 3	Adequate for staff and student use only

6. PLANNING THE AUDIO-VISUAL AID

6.0 Introduction

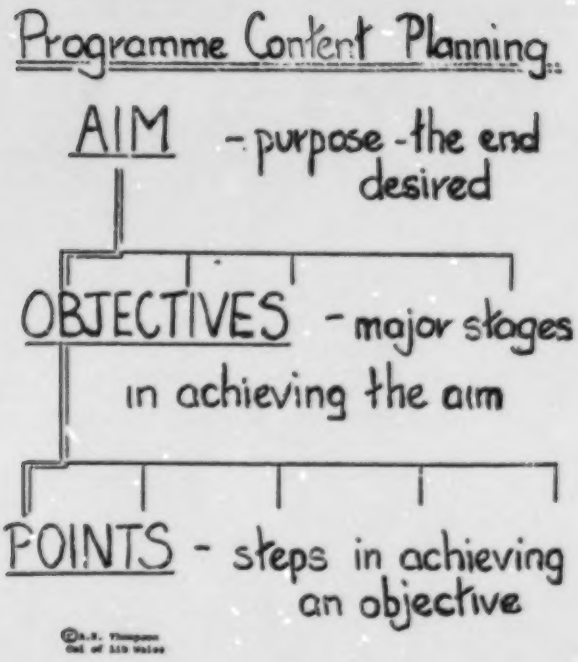
Effective av aids need careful planning. The necessary planning criteria are:

Design criteria

Aim
Objectives
Target audience
Media selection
Production — control
— criticism
— quality
Testing
Evaluation

6.1 Aims and objectives

The aim of an av aid is to provide a solution to a problem. The aim is achieved only when the target audience understand or are able to reach it. Each aid can have only one aim. If there are two aims there must be two separate aids.


Programme Content Planning..
AIM - purpose - the end desired
OBJECTIVES - major stages in achieving the aim
POINTS - steps in achieving an objective

For the purposes of this guide the words AIM and OBJECTIVES are used to mean:

AIM: The overall purpose of the aid, the desired end product or result

OBJECTIVE: A sub-aim, or a major stage to be achieved before the aim can be achieved

Another term, POINT, must also be defined:

POINT: A sub-objective, or step in achieving an objective. Each point must be achieved before the objective can be achieved.

For example, the AIM of a General is to win a war. His OBJECTIVES are a series of battles, each one of which must be won before he can win the war. Each battle is made up of a series of planned offensives which must be won before the battle is won. These planned offensives are POINTS.

After determining the aim of an av aid, the teacher must break it down into its objectives or the major stages necessary to achieve it. Each major stage is then analysed in the same way and broken down into points.

6.1.1 Simple aids

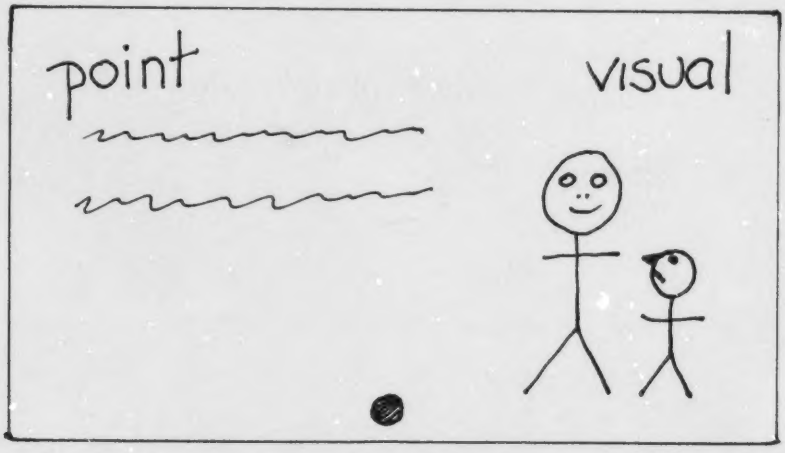
In the case of a simple aid, such as an OHT or a slide, this analysis may be a simple process, based on the knowledge that a need exists and the identification of an idea that will fill it.

6.1.2 Complex aids and programmes

For more complex aids or programmes, a careful analysis should be carried out, and the aim, objectives and points written down. While this may seem pedantic, it is the best way to ensure an effective audio-visual programme or sequence.

Of course, with growing experience in designing aids, the teacher may develop personal techniques. But experience has shown that the listing of aim, objectives and points remains a valuable method of determining the content

It is a good technique to record each separate point on the back of a discarded catalogue card of slip of paper, rather than to list them on sheets of paper, as cards are easier to manipulate in the later stages of production. If two-thirds of the card only are used for writing a text, the remaining third could be used later, after a decision has been made on the type of visual aids that are necessary to illustrate the point.



Old catalogue card used as a storyboard card for programme planning.

6.2 Target audience

It will be recalled that as the need or problem is inextricably connected to a target audience, the analysis of the aid or programme can only be carried out successfully with their needs in mind. (See 4.0.)

6.3 Styles of presentation

The way in which the teacher wishes to present the facts to his audience will also affect the points to be included. For most av programmes the teacher will choose a direct or factual approach--presenting the facts or points in a logical sequence. There are occasions when a different approach is called for. An audio-visual programme designed to introduce new junior members of staff to the routines

of their library could present a series of routines in a straightforward factual way. It might be more stimulating to use a simple storyline based on a typical day in the life of a new member of library staff and present the routines as seen through the eyes of this member of the target audience.

Once the points are arranged into a logical order, or to fit the storyline, the form of the programme becomes obvious. The value of indicating separate points on individual cards for subsequent arrangement or rearrangement is illustrated by this case.

6.4 Media or format selection

Once the content of the programme or aid is clear, the selection of the appropriate audio-visual format can be decided (see 5.0). It will be recalled that this decision must reflect not only the requirements of the content but also the circumstances in which the teacher wishes to present the aid to the students.

6.5 Production

6.5.1 Control. It is important that the teacher retain control of the production of the aids.

While it is easy to ask others to design and produce av aids, such aids rarely satisfy the specific needs of the teacher.

6.5.1.1 Simple aids. Wherever possible, the teacher should make such simple aids as overhead transparencies, slides and sound recordings himself, for they are all within his capabilities and it is most economical to do so. Most of the aids made in this way will meet their aims, while those few which are not successful or cannot be used again will have cost little to produce. If it has been felt necessary to involve other specialist staff, both the good and unsuccessful aids will have cost much more to produce.

If for some reason the teacher is unable to make his own simple aids and has technical staff who can help him, it is essential that the initial planning and design be done by the teacher and the aid is fully discussed in advance with the specialist who will make it. Specific and detailed instructions must be given by the teacher to avoid misunderstanding and the waste of technical staff time in producing unusable aids.

6.5.1.2 More complex aids and programmes

The teacher should be responsible for the planning and design of sequences and for the scriptwriting of programmes and should undertake the physical production of the programme wherever possible. Where production work is to be carried out by a team of people the teacher must make every effort to ensure through discussion and co-operation that the programme is precisely what is required.

6.5.2 Criticism

Constructive criticism from colleagues whose opinions the teacher values can be of great help. When a teacher is involved in planning and producing a programme it is easy to get carried away and forget essential points, or let the technology take over to the detriment of the programme. Consulting an unbiased colleague at important stages of production can often identify difficulties or omissions that, if not corrected, could result in an unsuccessful programme. However, experience shows that the worst possible way of planning and producing an audio-visual programme is to have a committee. A single person must be responsible for a programme.

6.5.3 Quality

Badly produced av aids either in terms of planning or technical quality, cannot achieve their aim. It is essential that teachers of librarianship and information science should be seen to be communicating information effectively. There can be no excuse for OHTs that the audience cannot read, slides that are incorrectly exposed or out of focus and tape/slide programmes of such length and complexity that the audience is put to sleep.

6.6 Testing

This is done by trying out the aid with a representative group of the target audience. When using an aid for the first time, be on the watch for any unusual audience reaction. Lack of attention could indicate inability to understand or see the aid, suppressed laughter may indicate a spelling mistake or some other inaccuracy. Always note audience comments and correct any errors before further use.

6.7 Evaluation

Evaluating av aids can only be subjective, unless the teacher gives students an objective test after their use. Noting student reaction, spontaneous discussion and appreciation of the subject as shown in tests and examinations, and comments from colleagues are among the ways in which a teacher may evaluate av aids. Only when tested and evaluated should an aid be put into regular use. The experience gained in evaluating aids lead to more confidence and success in their production by the teacher.

7. OVERHEAD TRANSPARENCY PRODUCTION

7.0 Introduction

People in many professions find the OHT valuable and numerous ways of producing and presenting them have been devised. The materials for some of these can be very expensive and skilled technical staff is needed to use some of them effectively. While these sophisticated aids can create a very favourable impression, they really have no more educational value than the simpler and less expensive OHTs.

The present text will therefore concentrate on the production of educationally effective OHTs which can be made quickly and simply by a busy teacher. Particular attention will be given to hand-written or hand-drawn OHTs and to those produced by photocopying. Other methods will be mentioned so that teachers will be aware of the possibilities, should they have access to the necessary technical staff.

7.1 Physical description

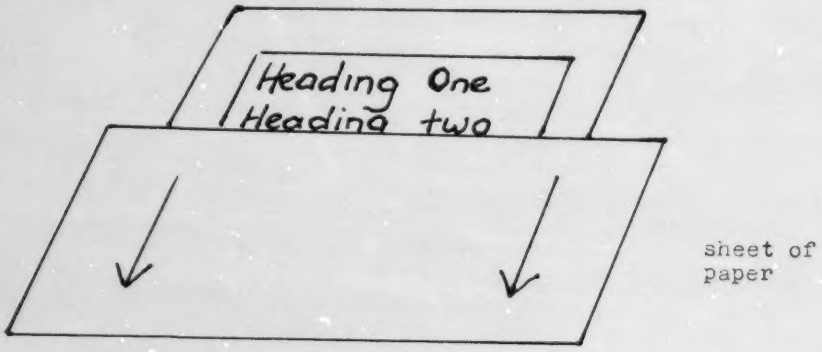
The information on an OHT is usually written, drawn or photocopied on one or more clear acetate or plastic sheets. These sheets are normally mounted on to card frames for ease of storage and handling.

7.1.1 Presentation methods

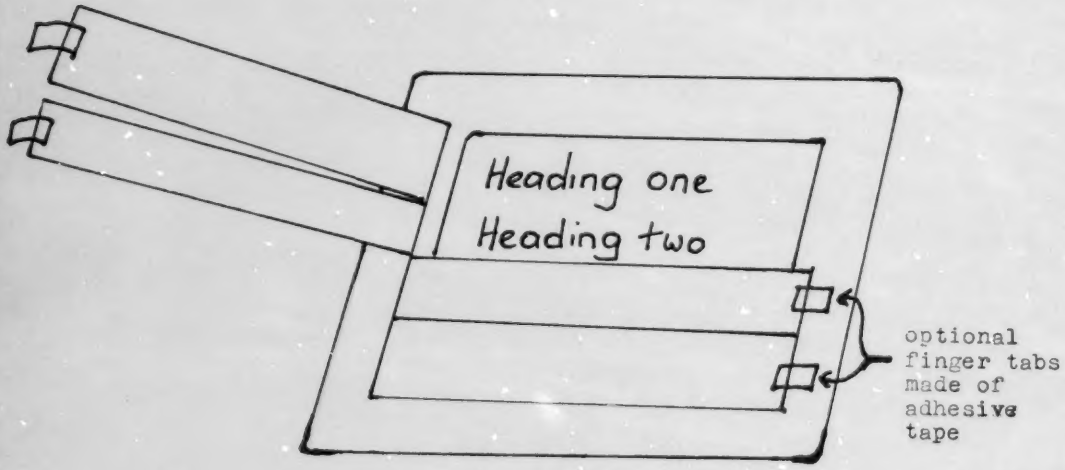
The information on OHTs can be organized and presented in three different ways:

Single statement OHT. Here the information--lists of points, diagrams, flow charts, statistics, definitions or other details--is written on a single sheet of acetate. When the overhead projector is switched on, all the information on the sheet is revealed at once. This is the most commonly used form of OHT.

The revelation technique. The information, usually lists of points or headings, is written on a single sheet of acetate. By using a sheet of paper as a mask and moving it down or across the OHT, the teacher can reveal each heading separately and discuss it before revealing the next heading, and so on until the complete list is shown.



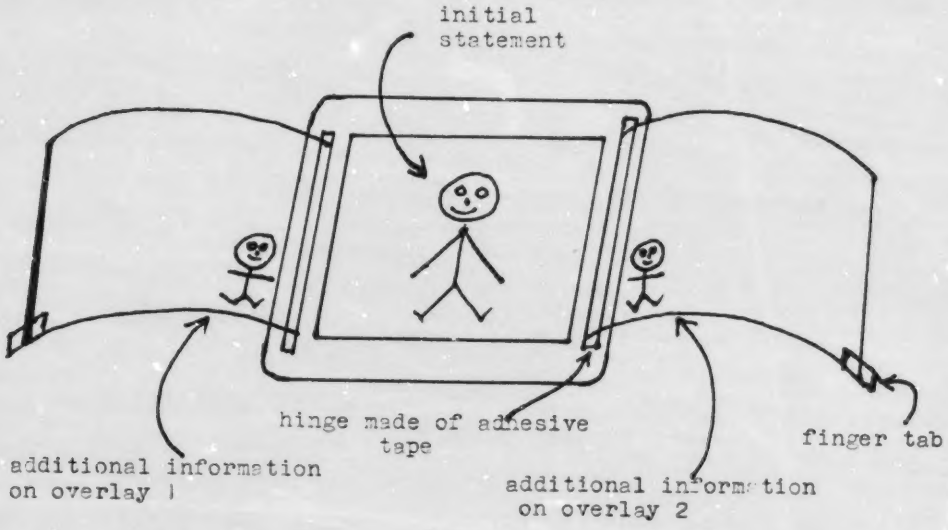
Instead of using a sheet of paper as a mask, covers of card can be hinged with adhesive tape to the cardboard frame of the OHT. These can be opened as required to reveal the heading beneath.

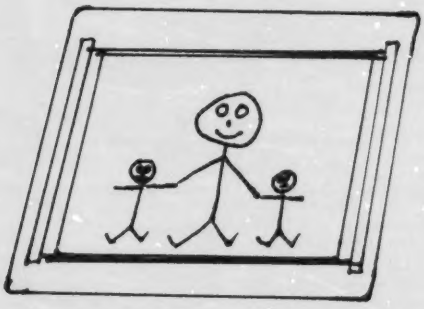


The revelation technique can help to maintain concentration and interest.

The overlay technique. This method allows the teacher to add further visual information to an initial statement during the presentation. The initial information is prepared on a single sheet of acetate which is then mounted into a cardboard frame. The additional information is prepared on additional sheets of acetate which are hinged on to the frame and placed one at a time over the initial information. In this way the teacher can project and discuss the initial information and then add details without having to redraw the initial information.

This technique can be used with words or diagrams. It is an ideal method of building up the component parts of a catalogue entry, for instance.





with both overlays in place the completed statement is shown

7.1.2 Colour in OHTs

There is little to be gained from using a variety of colours on OHTs in teaching library or information science, although in other fields, such as medicine, colour may be essential to the learning process.

Therefore, use only one dark colour--black, blue, red or brown--when making OHTs unless the need to use two or more colours is essential to aid comprehension.

If paper copies of OHTs are to be given as handouts it is essential that only the dark colours be used on the original OHT, as most photocopiers will not copy light colours effectively. Black, dark blue, brown and dark red tend to copy well.

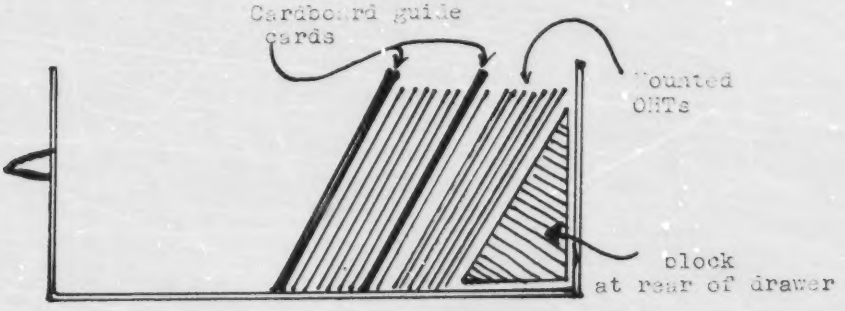
If it is necessary to use large areas of colour, it is better to use either self-adhesive transparent coloured plastic or self-cling plastic cut to shape. Colouring a large area with OHT pens usually gives untidy results.

7.1.3 Mounting, storage and retrieval

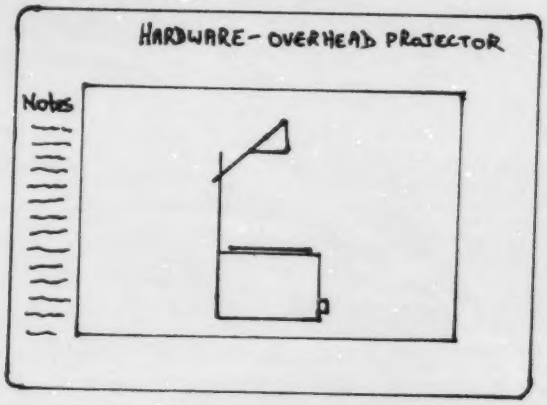
Experience suggests that where the OHTs are to be presented mainly in the teacher's own institution they should be mounted with adhesive tape on to standard sized cardboard mounts, if these can be obtained. Unfortunately, the external dimensions of the cardboard mounts of different manufacturers vary, and for filing purposes it is best to use only those of one manufacturer which will be of the same dimensions.

Mounting makes the OHT easier to handle and eliminates the need to touch the acetate surface, which in hot weather can damage the OHT. Perspiration on the fingers can erase information on the acetate if it is written with a water-soluble pen.

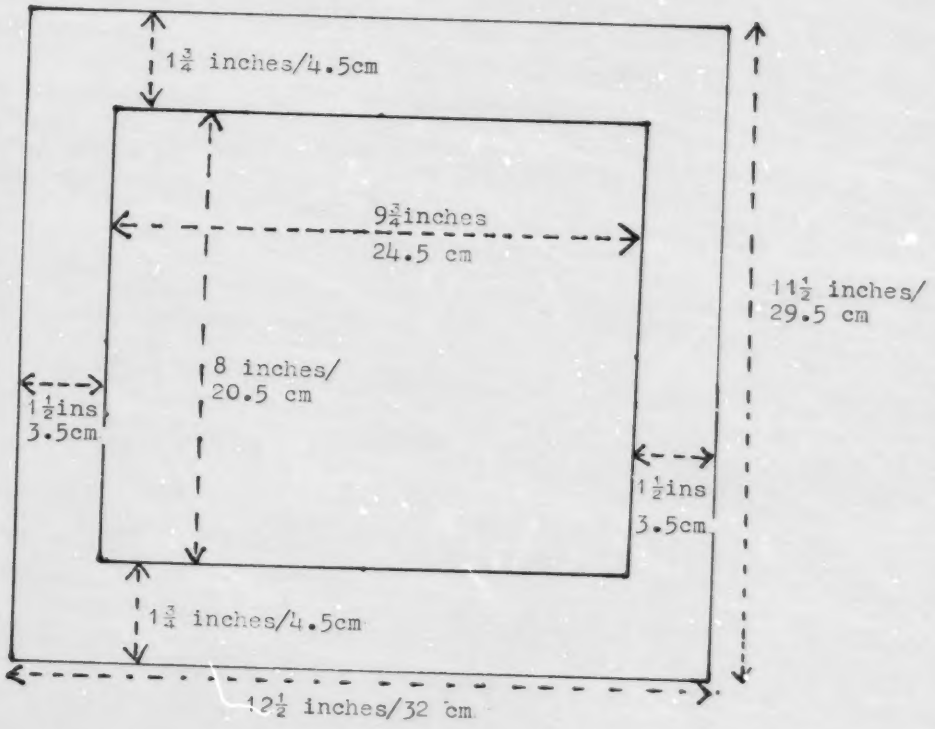
Mounting also permits adding notes relevant to the content of the OHT on the edge of the frame which only the teacher can see. It enables the easy storage of OHTs in orderly fashion in boxes or the drawers of office filing cabinets. In A4 sized cabinet drawers OHTs must be stored at an angle if the drawer is to close. A simple wooden or cardboard block can be made to fit into the back of the cabinet drawer to support the OHTs at the correct angle.



As many as 200 or more OHTs can be stored in one drawer in this way. If the filing details are written in large letters at the top of the OHT, retrieval becomes very simple.

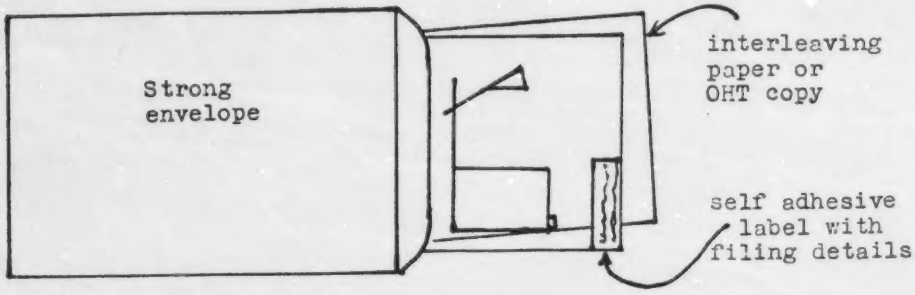


If mounts are not easily available commercially, a mount can be cut out of any sheet of strong rigid cardboard. Even the side of a cardboard box of the right size will do. If mounts have to be made by the teacher and time is limited, they should only be made for those OHTs which need revelation hinges or overlay acetates.



Dimensions of an Overhead Transparency Mount.

For use outside the teacher's institution, unmounted acetate sheets are easier to transport. These can be stored by subject in strong envelopes of the correct size. It is a good idea to interleave each acetate with a paper copy of the OHT made on a plain paper photocopier, as this helps to identify the OHT and acts as a paper master from which more copies for handout purposes can be made. A sheet of plain paper can be used instead, however. A small self-adhesive label with filing details written on it can be stuck on the bottom right-hand corner of the acetate to make retrieval easier.



Storing unmounted OHTs in envelopes.

Some lecturers who use lecture notes as well store the unmounted acetate sheets in the correct place amongst their notes.

7.2 Making handmade overhead transparencies

The following materials are required:

7.2.1 Clear acetate or plastic sheets. A range of clear flexible acetate sheets is commercially available in most parts of the world, or could be cut to size by a local plastics company. The teacher can also cut his own from clear plastic sheeting. Even the thin sheeting used for plastic bags or for wrapping food in shops will do, although this is so thin that a cardboard mount is essential to hold it in shape. Acetate sheets are approximately 11 x 9 inches/27.5 x 22.5 cm. for the oblong format, which is preferable to the less used square format. Oblong formats are easier to store in envelopes and filing drawers.

Rolls of OHT acetate are usually supplied with the overhead projector. This acetate can be cut to the correct size to make individual acetates, although a short length from the roll should always be left on the projector to protect its glass top from dirt or damage. When equipped with a roll of acetate, the overhead projector and water-based pens provide a cleaner and more convenient alternative to the blackboard and chalk. The roll can be cleaned afterwards for re-use. Never write directly on the glass top of the projector. This can cause permanent damage. Some teachers prepare their OHTs on the acetate roll like a series of cartoons, winding on between each frame. This is an inflexible method however. It is much better to use separate sheets of acetate which can then be used in any order and are easier to store and retrieve.

Colour-tinted acetates are also manufactured. These are used in the same way as clear acetates, but provide a coloured background. They are more expensive and have no additional educational value.

7.2.2 Overhead transparency pens. Several manufacturers produce pens for writing on acetates or plastic. These are either water based, or spirit based and are available in a range of colours and with various sizes of writing tip. The water-based pens are the most useful, as mistakes can be simply removed by saliva or water on a paper handkerchief, and old OHTs can be completely cleaned by washing and the acetate sheet re-used. Spirit-based inks can be corrected by using special plastic rubbers or spirit-based solvents, but they can leave a permanent stain on the acetate. They are best used only for making permanent OHTs.

Always remember to replace the cap on both types of pen immediately after writing, otherwise the pen will dry up very quickly. A water-based pen can be revived, if the cap has been left off accidentally, by applying saliva or water to the tip.

Ordinary felt-tip pens are not suitable for writing on plastic as they tend to leave a trail of blobs, rather than clear lines.

It is possible to write on plastic with chinagraph (soft wax) pencils available in various colours, although these do not give as good an image on the screen as the pen. Very soft plastic sheet can also be written on with a ball-point pen. However, use overhead transparency pens for the best results.

7.2.3 Additional useful materials. It is useful to have at hand a number of other materials, including cardboard mounts and a piece of softboard, at least 5mm thick, that is larger than the OHT mount or frame. This will act as a suitable and portable base for drawing the OHT in the teacher's home or office. Drawing pins or bulldog clips, or small self-adhesive labels will hold the acetate firmly on to the softboard. Scissors, a good, long wooden or plastic ink ruler at least 12 inches or 30 cm in length, with at least one raised edge, a rubber and adhesive tape will also be useful. Transparent adhesive tape is acceptable although this tends to dry up and lose its adhesion in hot climates. Masking tape is better. A supply of templates, dealt with in 7.2.5 will also help.

7.2.4 Lettering sizes and maximum number of words

Every member of an audience must be able to read the information on the screen when an OHT is projected, otherwise it fails to meet its aim. Normal handwriting or copies of a page of computer output cannot easily be read in a classroom or lecture theatre and must not be used. The correct size and style of lettering is important.

Lettering sizes. Handwritten letters or characters must be a minimum of half an inch or 1.25 cm high on the OHT acetate if they are to be readable on the screen.

Where a written language uses capital and small letters, the capital letters should be at least half an inch or 1.25 cm high and the small letters without ascenders and descenders should be at least a quarter of an inch or 0.625 cm high. Small letters with ascenders and descenders such as p, d, h etc., should be the same size as capital letters. When writing on an OHT acetate and when making captions for photography use both capital and small letters as appropriate in normal writing. The use of all capital letters should be avoided as this does not make for easy reading.

Each letter or character should be written separately, using the simplest possible style. The teacher should develop and practice a simple lettering style for use with his OHTs. It does not require any artistic ability. Suitable lettering styles are shown on page 57.

Maximum number of words

Because of the necessarily large size of the letters or characters, the amount of text that can be accommodated on a transparency is necessarily limited. In languages that use letters to make up words a maximum of fifty words is possible. Languages like Chinese that use one character for each word will accommodate more words on each OHT, but even here a maximum of about eighty characters cannot be exceeded.

7.2.5 Template. It is essential to use a template or guide underneath the sheet of acetate when hand letting or drawing an OHT to ensure even lettering. The example which follows shows a template designed for this guide. Two further copies of this template are bound in at the rear of this guide. These can be removed and used as they are or can be photocopied to produce further copies.

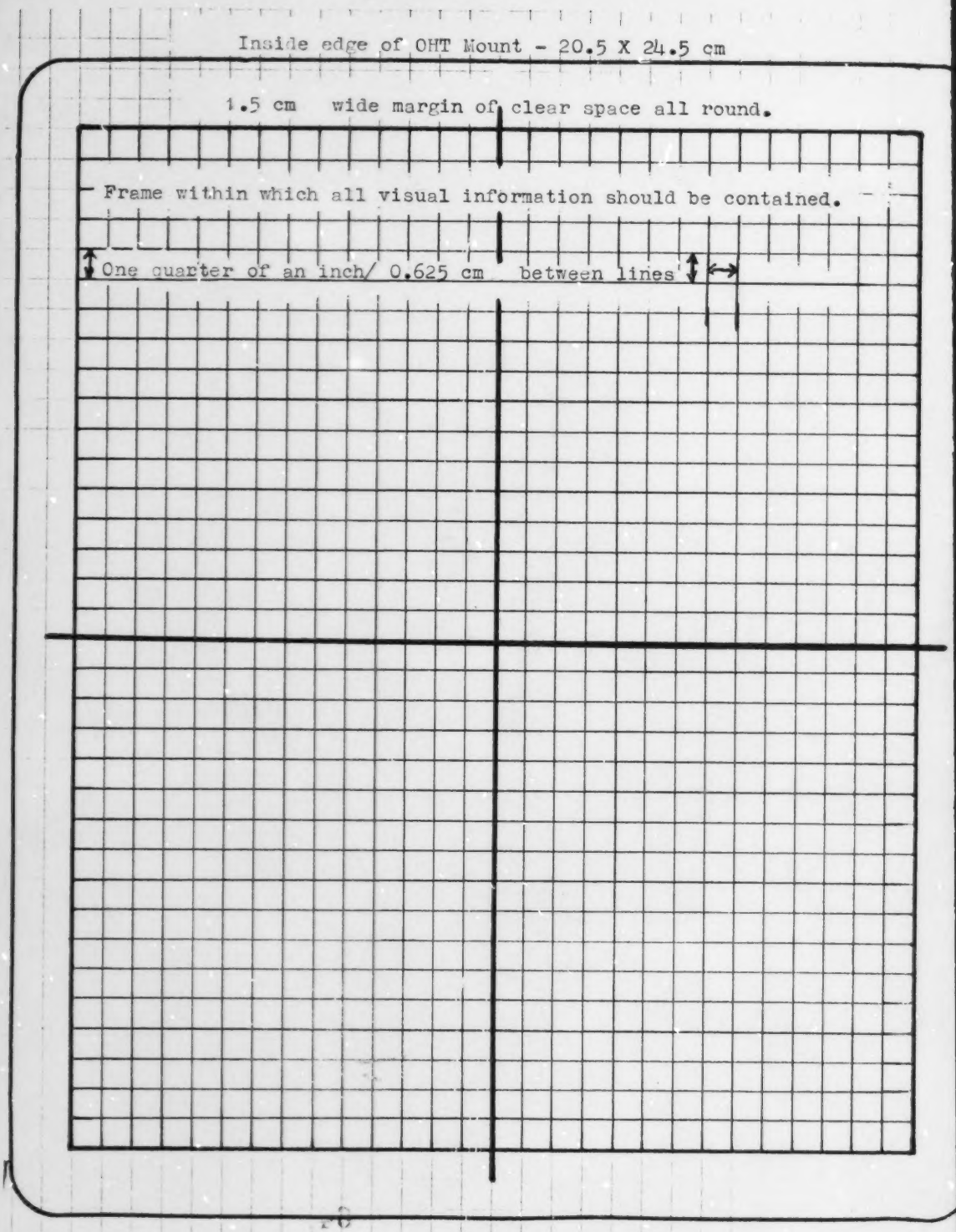
The template is designed to leave a margin of just over half an inch or 1.5 cm of clear space around the content of the OHT when it is mounted in a frame. Many OHT projectors are characterized by poor light output at the edges of the picture or may even suffer optical distortion there. For this reason the margin should be left clear. No writing or drawing should appear near the edge of the OHT mount. This frame is suitable for oblong OHTs, used either horizontally or vertically.

The space between two lines on the template is 0.625 cm, the ideal size for small Roman letters. Capital Roman letters, Arabic, Thai and Chinese should be written between three lines, which are 1.25 cm apart. Ascenders and descenders may go into the space above or below if required. The use of this template will ensure neat, level, readable lettering of the correct size, and will aid the effective design of the OHT.

7.2.6 Designing OHTs. At least until the teacher becomes experienced at OHT production, it is a good technique to design the OHT first on paper in pencil before writing or drawing on the acetate. Paper copies of the template will be an ideal support for the initial design, the squares and lines ensuring the correct lettering sizes, controlling the amount and spacing of the lettering and helping in drawing. If no templates are available, then lined A4 writing paper with lines approximately 7-8 mm apart will do. Remember to work within a frame of 8½ x 6¾ inches or 21.5 X 17 cm.

Designs for OHTs should be simple. It is not possible to present a great deal of information on an OHT. A paper handout is better for detailed information and should accompany an OHT where such detail is required.

7.2.7 Lettering and drawing on acetate. The design on the template or a clean template should now be placed on the softboard or another suitable base and the sheet of acetate laid over it and fastened down so that the two are held together. The frame of the template should be placed in the centre of the acetate to allow plenty of space for mounting the acetate on its card frame afterwards.

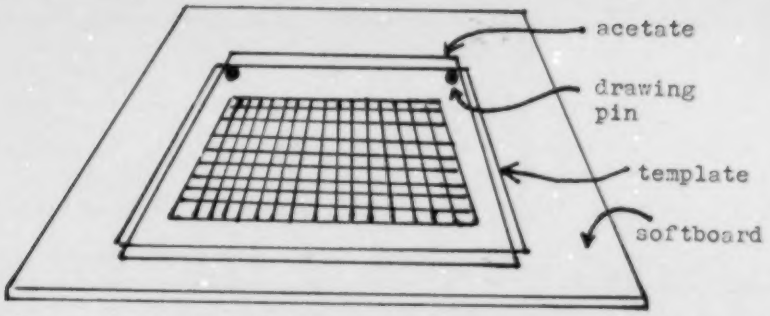

Inside edge of OHT Mount - 20.5 X 24.5 cm
1.5 cm wide margin of clear space all round.
Frame within which all visual information should be contained.
One quarter of an inch/ 0.625 cm between lines

Example of Template for Overhead Transparency Production.

Overhead Transparency - Lettering styles, minimum sizes, and spacing. Use simple stick letters touching the top and bottom lines.

دڤن مڠكونكن رواڠ بڠ دسديكن،
تولیسن اندا اكن برتمبه بائيك.

亚洲地区声象与计
录机辅助教学技术
报告会



The design can now be traced on the acetate or drawn directly, using an OHT pen. When lettering, leave one or two spaces between lines of lettering. Ascenders and descenders may go into these spaces as necessary. See the lettering examples on the preceding page.

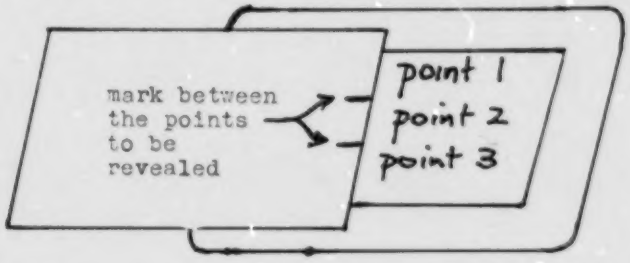
When drawing, use the raised edge on the ruler otherwise blotches may occur. Round shapes can be drawn by using coins or any other suitable circular object as a pattern. Special compasses with a rubber sucker instead of a spike can be obtained for OHTs, but would, no doubt, be rarely used.

When the teacher intends to use the OHT over a long period of time or in hot and humid climates, permanent OHT pens should be used to avoid smearing. Placing a piece of paper between the acetate and the hand will prevent smearing during lettering or drawing.

When complete, the OHT should be removed form the board and mounted on to the underside of the OHT frame. If an OHT original made with water soluble ink proves important enough to keep for some time, there is no need to redraw it with permanent pens. Simply place a second layer of acetate over the top of the original and stick it to the frame, thus protecting the information.

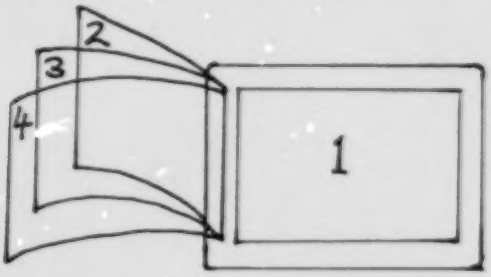
7.2.8 Making revelation covers and overlay OHTs. OHTs designs for the revelation technique are designed and produced as in 7.2.6 and 7.2.7. Hinged covers permit a more professional presentation than the use of a piece of paper as a mask. Mount the OHT to the underside of the frame and hinge the covers on the top to the frame.

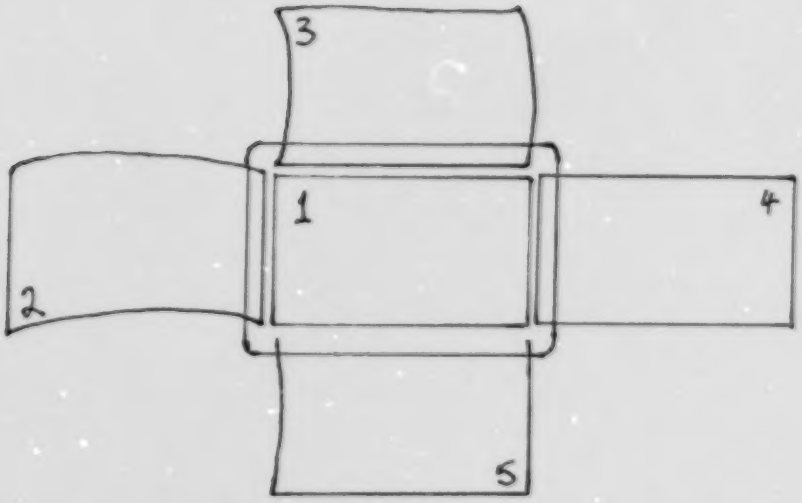
Lay a piece of card approximately 11¼ x 9 inches, 29 x 22.5 cm halfway over the information to be revealed and mark the points where the individual covers are to be cut.



Cut along the marked line with a sharp knife and a ruler up to one inch or 2.5 cm from the left-hand-side of the card. Stick the left-hand-side of the card to the left-hand-side of the frame so that the cut flaps are positioned over the points they are to reveal. Glue or adhesive tape can be used. Fold the flaps back until they open and close easily. Make finger tabs with adhesive tape if required.

OHTs for the overlay technique should be designed in full on the template. Mount a clean OHT acetate on to the topside of the OHT frame, not the underside as before. Place the mounted acetate in position over the template on the softboard and pin or clip it to the board. Trace or copy those parts of the information that form the initial statement on the acetate. Then place another acetate exactly over the first and hinge it down one side to the frame with adhesive tape. Next trace or draw the second stage of the information on to the top acetate. As the first picture can be seen underneath, it is easy to get all the details in register. Further layers of acetate can be hinged to the frame so that they exactly fit the others, and more information added. Six layers of acetate is the maximum that should be used as each layer reduces the light falling on to the screen. Overlay acetates may all be hinged on the same side of the frame when the information is to be presented in a strict sequence. If it may be necessary to present the information in various sequences, up to four acetate sheets can be hinged, one to each side of the frame.





Alternative methods of hinging overlay sheets to frame.

7.3 OHTs made by copying from existing documents

The use of a photocopier allows a teacher to make OHTs from information on paper, in books or even of pictures, provided that the information is suitable for use as an OHT in the first place.

Typescript of normal size will not be readable when copied on to an OHT, as most type-faces are 8-12 point size. To be readable on an OHT, type-faces should be at least 24 point size.

Many diagrams in books are too small or have types too small to make them readable as OHTs. Also, many diagrams, while perfectly suitable as book illustrations, may be too complex for use on OHTs.

However, there are occasions where printed materials are suitable for copying. For example, title pages of certain books can be copied for cataloguing exercises. Some diagrams are suitable--if sufficiently simple and with large type. Sometimes the teacher will want to use a photograph in a book, not having the time or need to make a slide.

If the original visual is a minimum of 8 x 6 inches or 21 x 16cm it can be copied on to an OHT. Any lettering not required on the original or which is too small to read can be masked out with small pieces of white paper during the copying process and rewritten by hand on to the OHT acetate in the correct size after copying. It is good policy not to include any lettering that is too small, as the audience will try to read it and in so doing become frustrated and miss the real message of the OHT.

There may also be occasions when a teacher would prefer to make his original design on paper and then photocopy it, rather than redraw or write directly on to the OHT acetate.

Two types of photocopiers can be used to make copies from paper on to acetate, the plain paper electrostatic copier and the heat copier. The former is much cheaper and produces generally better results more simply.

7.3.1 The plain paper electrostatic copier

Such copiers are made by Xerox, Canon, Mitsubishi, etc. These copiers will copy from books as well as single sheet documents. They will produce readable results from photographs and prints, and the copy is inexpensive to produce. In addition to access to the machine, the teacher will need a supply of the OHT acetate sheets marketed by the manufacturer of the copier. These are the exact size for the machine and are of the correct grade of plastic. Ordinary plastic and acetate sheets should not be used.

Copying from documents. Place the document face down on the platen of the copier, masking out any unwanted information with white paper. The masking out of the edges of the document or the title of the picture can be done when the OHT is mounted into its frame by sticking a white paper or card mask on to the OHT frame. Make a copy on to paper first to ensure that the document is centred correctly and that the picture is of the right contrast. Then place one of the manufacturers' acetate sheets on top of the paper in the paper-feed tray and make a copy. The result should be a good permanent copy on acetate.

Copies of overhead transparencies. It is also possible to make copies of an OHT either on to another sheet of acetate, if a duplicate is required, or on to paper for use as a hand-out. Place the original OHT face down on the platen of the

copier and cover it with a sheet of clean white paper. Make a copy first to see if it is centred properly and the contrast is correct. Place a sheet of the manufacturer's OHT acetate in the paper-feed tray if a duplicate copy on acetate is required.

7.3.2 Heat copiers (thermographic)

These copiers are usually designed to copy from single sheet documents only and are less easy to use. Copies can only be made from a paper document printed with carbon-based ink on to either acetate or paper, so heat copiers cannot produce duplicate copies of an OHT or mass duplicate paper copies for hand-out purposes.

Specially prepared acetates can be obtained from the manufacturer for use with the heat copier. These are more expensive than those used with the plain paper copiers and there is more likelihood of error in the copy process.

As heat copiers are not standardized, it is necessary to follow the manufacturers' instructions precisely when making the copy from the original.

7.4 Conclusions

The methods given above allow teachers to produce a sufficiently wide range of OHTs to satisfy most needs. There are other useful production methods, but they usually require technical staff to carry out the process thus making them more expensive.

7.4.1 Transfer alphabets

A wide range of transfer alphabets are available which can be applied to OHT acetates. However, it is not recommended that teachers use this method themselves as it will take a minimum of six times as long as hand lettering to make the OHT. The result will not warrant this extra time unless the teacher is very expert indeed with this type of lettering as the slightest error is magnified many times on the screen. Freshly manufactured transfer letters must be used on acetate--the adhesive forms an unpleasant halo effect when old letters are used--and it is uneconomic for the teacher to maintain sets of fresh letters.

7.4.2 Stencils

These can be used, but rarely produce better lettering the the teacher can develop himself with practice.

7.4.3 Photographic techniques

Typescript or book print should not be copied on to OHTs unless photographic tecnniques involving enlargement of the type to at least 24 point size are used. This can only be done by technical staff, and is an expensive process. However, if facilities to carry out this enlargement process exist, it is possible to expand the range of materials the teacher can show on the OHT. Enlargements of specimen sections of indexes, bibliographies, computer print out, or photographs can then be made.

8. SLIDE PRODUCTION

8.0 Introduction

The 35mm photographic slide is the most common of the slide formats and incorporates a photographic image in colour or black and white measuring 36 x 24mm and incalled the 35mm slide as the film stock from which it is produced is 35mm wide. To be used, the photograph must be placed in some form of mount measuring 5 x 5cm.

To be effective, slides must be technically correct, correctly focused, aesthetically well composed and convey a meaningful message. The ever-increasing cost of photographic film makes it important that teachers produce as high a percentage as possible of effective slides. Mastery of the camera and a working knowledge of composition are within the capabilities of all teachers.

8.1 Equipment and materials used

8.1.1 A camera

A semi-automatic, single lens reflex 35mm camera is recommended. However, any other camera using the 35mm format which has an optically correct glass lens and can be focused down to about 0.5 of a metre for close-up work will be satisfactory for location photography. Caption and graphic production will normally require a different lens.

A good semi-automatic single lens reflex camera contains an accurate exposure meter to control the amount of light required to expose the slide. It has a lens unit that can be removed and changed for another with different abilities, without having unwanted light fall on the film surface and waste film. It has a range of shutter speeds and aperture controls. The camera should have a rubber lens hood and a strong neck strap which should be used at all times.

8.1.2 A medium-range battery-operated automatic electronic flash unit

This type of electronic flash unit is commonly available and is relatively inexpensive to purchase and run. A set of small batteries will produce more than 150 flashes. The flash unit contains an automatic device that measures the amount of light required for each photograph thus relieving the teacher of a mathematical calculation before each picture. One set correctly, the automatic device allows the photographer to work wihin a variable range of distances from the subject, for example between 1 and 5 metres, without altering the controls on the camera or the flash unit. It will provide sufficient light for close-up and medium distance photography (up to 10 metres approximately) in any library, however dimly lit.

The camera and flash unit are all that a teacher needs for taking slides. Both units are compact and occupy only a small amount of space in a brief case. The author carries his camera and flash unit on every library visit and produces between 300 and 500 teaching slides each year for his own use and for colleagues.

8.1.3 Additional useful equipment

For the making of caption and graphic slides a camera tripod is necessary. A tripod should be sturdily built, with two or three sections only in each leg. It should have a pan and tilt head on a rising central column that can be removed and reversed for copy work.

A flexible cable release is essential for use of the tripod. This allows the camera shutter to be operated without touching the camera. A filter ring to fit the lens unit, and a few colour filters (e.g. yellow, orange, light green and sepia) are useful. An ultra violet filter can be left on the lens unit permanently as it helps to keep the lens clean. These accessories are inexpensive, apart from the tripod which will cost about as much as the electronic flash unit.

8.1.4 Lens

Thirty-five millimetres reflex cameras are usually sold with a standard lens which will focus between approximately 0.5 metres and infinity, and has generally the same vision characteristics as the human eye. However, the teaching of library and information science often require slides of small objects or copies of books, illustrations, captions, etc., where it is necessary to focus the camera below 0.5 metres. Indeed it will sometimes be necessary to focus as close as 6-7cm, and for this the standard lens is not suitable.

A macro lens is basically a standard lens with an extended focusing scale from, in some cases, 3-4cm to infinity but designed primarily for close-up photography. Such a lens is more expensive than a standard lens. However, it is possible to purchase the camera body only, and buy a macrolens instead of a standard lens, which results in a more flexible camera for teaching purposes.

Another lens that has greater flexibility than the standard lens, which can be used for location photography and can focus as close as 0.25 of a metre, is the 40-80 mm (approximately) zoom lens with macro facility. This has all the capacity of a standard lens, plus limited wide angle, telephoto and macro facilities on one lens. Although it is larger than the standard lens, it does give increased flexibility and avoids the necessity of carrying a range of lenses.

8.1.5 Films

Slide film is made by a range of well-known manufacturers in most parts of the world. It is not recommended to purchase the film of little-known companies.

Location photography. Colour slide film for location photography using daylight or electronic flash light should be 'natural light' slide film with an ASA rating of between 100 and 200 (or DIN 21-24). The ASA rating indicates how quickly the film responds to light, and is recorded on the film box.

Photographic copying. If the copying of documents, captions and graphics is carried out in daylight or florescent light, the natural light film just mentioned will be suitable. If, however, the copying is carried out using artificial light of the tungsten variety, then 'artificial' light film must be used.

Copying black and white documents. If the original is in black and white, colour film can be used. But better results are obtained at less cost if Agfa Dia-direct film can be obtained. This produces a black and white slide of high quality.

Processing. All the films mentioned should be sent to the manufacturer's nearest processing station for development. This should not be attempted by the teacher as it is both time-consuming and expensive to carry out for only small numbers of films. Some teaching institutions may have their own processing facilities operated by technical staff, however.

8.2 Using a camera

The teacher must familiarize himself with the parts of the camera and its operation, by carefully reading the instruction book and practising the various stages in taking a photograph listed therein, before putting a film in the camera. Due to variations between one manufacturer's camera and another, and the constantly developing technology, it is not possible to describe the use of every camera.

The teacher must be able to:

Identify and operate the camera back opening mechanism and load a film correctly.

Identify and operate the film advance lever and exposure counter, and be able to rewind the film into its cassette after exposure.

Identify and operate the shutter speed control and the shutter release button, which must be used before the film can be wound on. If the camera back is opened the shutter can be seen operating at the selected speed.

Focus the picture in the viewfinder, by operating the focusing ring on the lens unit.

Operate the aperture settings by revolving the aperture ring on the lens unit. If the camera back is opened, the shutter speed set to 'B' or 'T' and the shutter button held down, the movement of the iris can be seen.

Identify and operate the film speed selector.

Identify and operate the exposure meter to achieve the correct speed and aperture for each picture.

8.3 Stages in taking a photograph

The following sequence can be followed until the teacher develops his own procedure:

8.3.1 Preliminaries

Load the film into the camera, close the camera back and wind on until the exposure counter is at the zero position.

Set the correct ASA or DIN film speed rating on the film speed selector, or check that it is already set correctly. This should be done each time a new film is loaded into the camera.

8.3.2 Taking the photograph--location photography in daylight

Set the shutter speed. Normally 1/125th of a second is used for day-lit situations, but 1/60th can be used if lighting is poor. Below 1/30th of a second a tripod and cable release should be used. Speeds faster than 1/125th of a second should be used where there is movement on the scene to be photographed.

Look through the viewfinder, compose the picture and focus accurately.

Set the correct aperture using the exposure meter. Switch off the meter if this is separately switched. Wind on the film.

Hold the camera level and steady.

Press the shutter release.

8.3.3 Taking the photograph--with electronic flash

Set the shutter speed. This is normally shown on the shutter speed indicator as a symbol representing a flash of lightening, or by the indication of one of the slower speeds, usually 1/60th of a second, in a different colour from the others. If no instructions are given, use 1/60th of a second.

Attach the flash unit to the camera. The electrical connection is usually made through the flash mounting shoe which the unit fits into. If not attach the flash unit cable (if fitted) into the flash connector marked 'X'.

Set the film speed (ASA or DIN) on to the film speed selector on the flash unit. Turn on the flash unit.

When taking a sequence of slides in a library, determine the maximum distance from which photographs will be taken. Refer to this distance on the film speed selector on the flash unit. This will show the correct aperture to use for that distance. Follow the same procedure if only one picture is to be taken or if using a non-automatic flash unit, by measuring the distance between the camera and the object.

Set this aperture on the aperture ring on the lens unit. With an automatic flash unit it will now be possible to take all the slides of objects between 1 metre and the maximum distance determined, without having to alter any of the controls. If any object is beyond the maximum distance determined, then refer again to the flash unit for the correct aperture.

Look through the viewfinder, compose the picture and focus accurately.

Wind on the film.

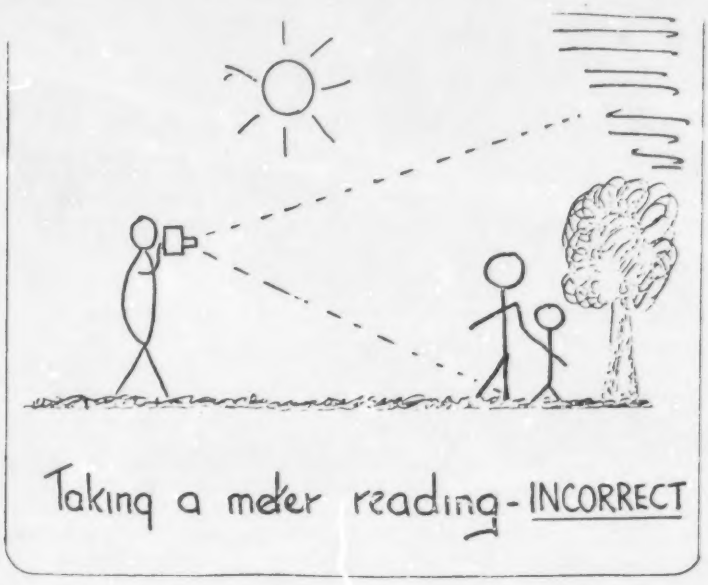
When the indicator light on the flash unit is lit, hold the camera level and steady and press the shutter release button.

Turn off the flash unit only when all the pictures are taken and remove it from the camera.

8.4 Correct use of the exposure meter

The correct use of the exposure meter is essential if the proper technical quality is to be achieved. There is a temptation with a reflex camera with built-in meter simply to point the camera at the object to be taken, compose, focus, take a

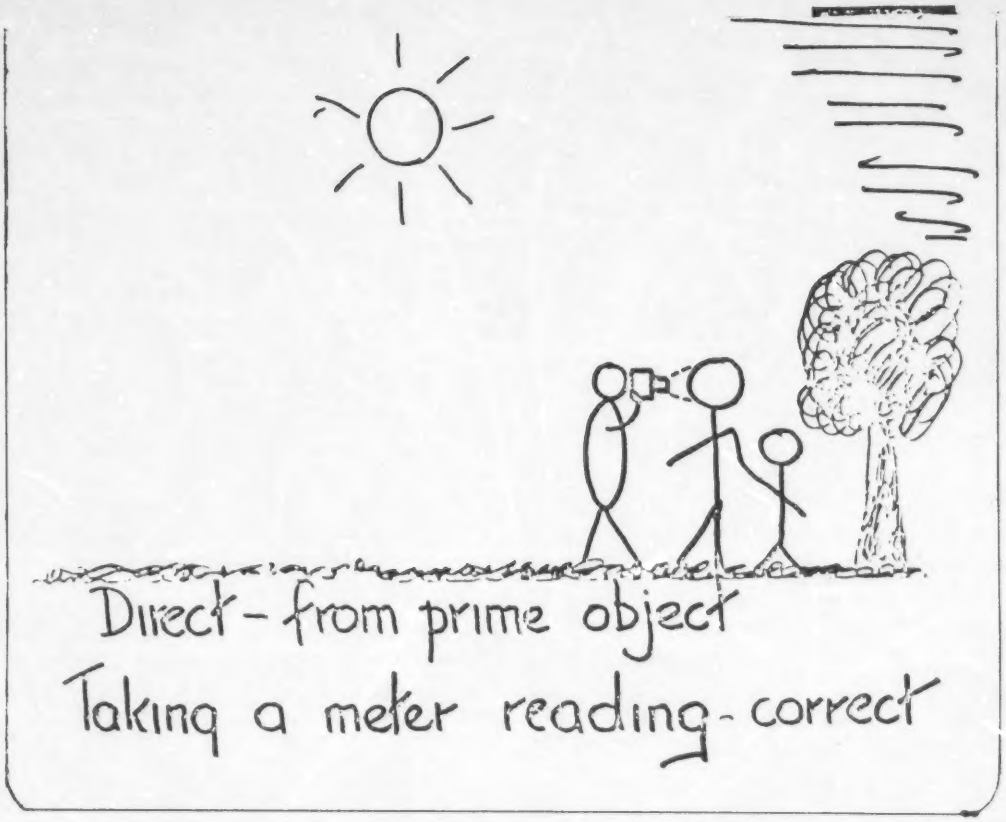
reading on the exposure meter and take the picture. Sometimes this will work but often it will not produce good results. The meter inside the camera usually reads all the light coming into the camera through the lens, not just the light reflected off the object itself. If a photograph is taken of a dark object against a light background, and a reading is taken from the camera position, the photographer will get a photograph of a silhouette of the object against a correctly exposed background. This is because the meter has calculated the exposure from the brightest part of the picture, the background, and not from the object itself.



Taking a meter reading--INCORRECT!

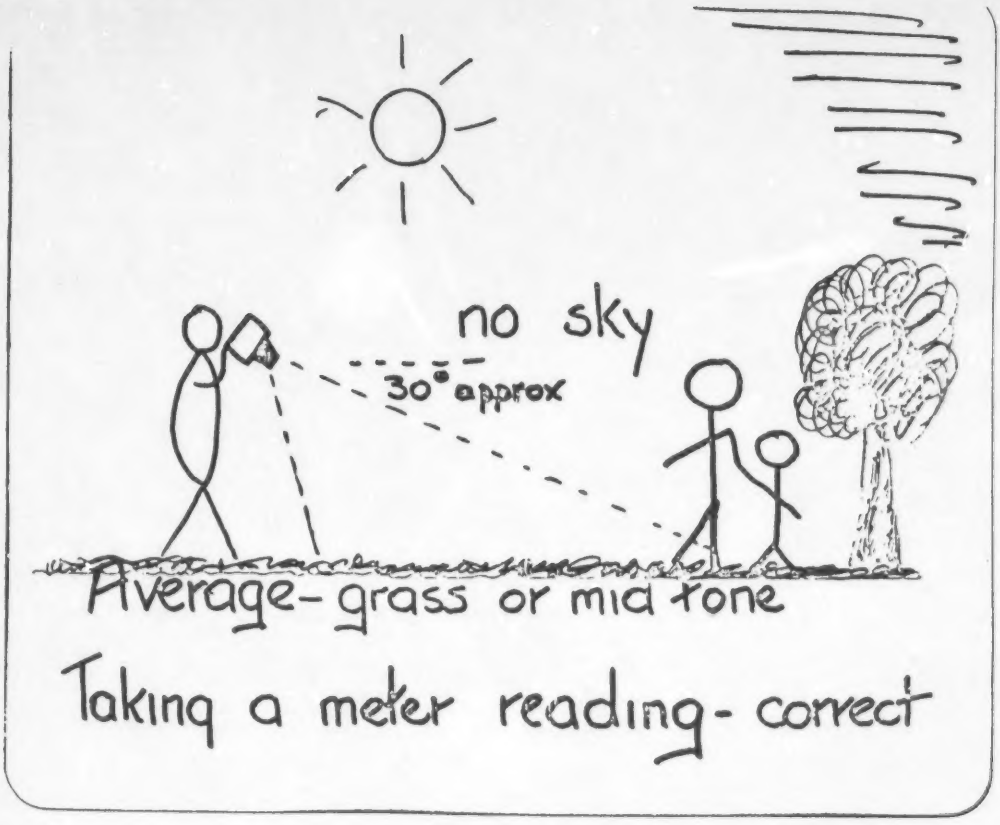
Ideally the exposure meter should only measure the light reaching the camera from the object itself, then and only then can the meter produce the correct exposure. Remember the meter cannot think, the photographer must do this.

The most accurate method of taking a reading on the exposure meter is to first go to the object to be photographed, and take a reading off the brightest area of the object by holding the camera about 0.3 of a metre away and ensuring that as little light as possible from any other object appears in the viewfinder. Having set the correct aperture, go back to the position from which the picture is to be taken and press the shutter release. Do NOT take another reading from the taking position--it could be quite different.



Taking a meter reading--CORRECT

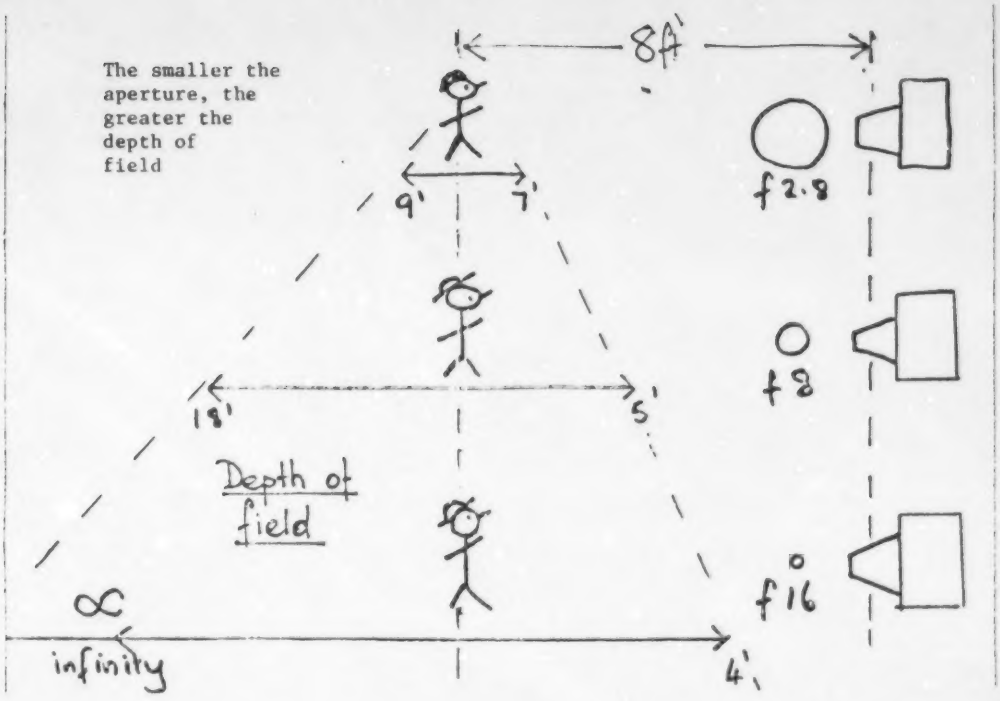
If it is not possible to get close to the object to take a reading from the taking position, point the camera down so that no sky or light background is visible in the viewfinder, and take a reading off a mid-tone colour, grass or a mid-grey surface, for instance, which is in the same lighting conditions as the object. Set the aperture, return the camera to the taking position and press the shutter release.



Taking an average reading--CORRECT

8.5 Depth of field

This is a technique that can be of help in making teaching slides, and which allows the teacher to produce blurred and unobtrusive backgrounds where required. Basically the smaller the aperture set on the camera lens (or the larger the number, i.e. f16 is small) the more detail there will be in front of and behind the object focused on. The OHT below illustrates this, measurements being given in feet, that is approximately 0.3 of a metre.



Thus by using a large aperture (f2.8 or f3.5) the foreground and background will be blurred, focusing the audience's attention on the main object. For library interiors, where plenty of detail is required, the smallest aperture possible should be used.

8.6 Using the camera on location

When photographing on location, for instance in a library or information service, a number of points should be kept in mind.

If possible, obtain permission both from the librarian or information officer, and from any people prominently included in the picture before starting to take photographs. Electronic flash can startle a reader. Try to minimize this, when possible, by photographing when the institution is closed to users.

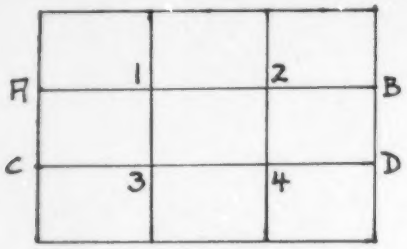
Always keep the neck strap of the camera round the neck for safety. The flash unit can be left in place switched on while making a sequence of photographs.

Where possible, the teacher should carry a list of the photographs he needs and hopes to get--a 'Shot List', which should be checked to ensure that no possible picture is overlooked.

When taking pictures of a complicated situation or system, try to analyse how it will be taught. Take one or more general shots of the situation first, then close-ups of its various parts to fit the probable teaching approach. To rely on one general shot is often unsatisfactory both for the teacher and the students.

8.7 Composition of slides

Good composition of slides is important. The object the teacher wishes to discuss must be obvious from the composition of the picture. The rules of composition divide a picture into thirds, as shown below. Horizon lines--for instance the line between sea and sky, should fall on the line AB if the shore in a seascape is the



most important part of the picture, or on line CD if the sky is most important. Prominent vertical lines should be on or near lines 1-3 or 2-4. Objects of prime importance should be placed on or near the points 1, 2, 3 or 4, rather than in the middle of the picture.

Always try to concentrate the viewer's attention within the frame of the picture. When portrying a person, never cut off parts of their faces, or other important details. Always look round the background of the picture in the viewfinder to see if there is any distracting or unnecessary detail that could be avoided.

Rows of books on shelves or catalogue cards in drawers make very dull slides, especially if several shots of this type are used in a sequence. Try to maintain interest by sometimes including a person in the picture. Take a picture over the persons shoulder as they are reading, or include a hand taking a book from the shelf, or hands holding a book open, or opening a catalogue drawer.

When pictures are taken of people, have them performing an action, e.g. speaking with a colleague; talking on the telephone; writing; rather than looking blankly at the camera.

An occasional humourous picture can also help to make a sequence of pictures more interesting, especially for students.

Exterior shots can be made more appealing by framing them with an artificial or natural frame. Take the photograph through a gateway, or with a branch of a tree postioned carefully.

Always photograph from as near to the object as is artistically possible. Wasted space on the slide is uneconomical and adds nothing to the picture.

Never photograph a reflective surface--a window or plastic sheeting--from directly in front, especially when using electronic flash. Reflections will often ruin the picture.

Look frequently at television, or good and bad photographs by other people, especially well-known photographers. These should be examined critically, and their composition analysed to improve the teacher's own techniques.

8.8 Mounting slides

Slides will be returned from processing either as a length of uncut film, which is cheaper, or mounted in card or plastic mounts.

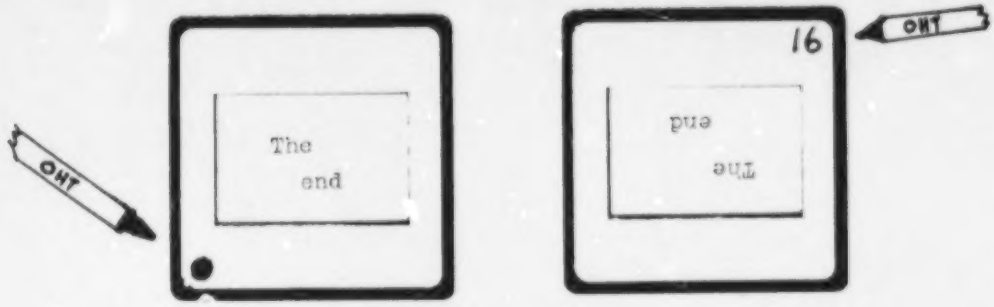
Unmounted slides. The film in its protective envelope can be examined by holding it up to the light or placing it on a light box. Slides that do not come up to standard can be marked by writing on the protective envelope over the slide with an OHT pen, and disposed of at the cutting stage. Use a 35mm film cutter to separate the individual slides wherever possible. This is much easier and neater than cutting the slides by hand, with scissors. Thirty-five millimetre cutters can be obtained from a number of audio-visual suppliers and are inexpensive. During the cutting process keep the slide in its protective envelope. The cutting should be done on a clean, dry surface to avoid scratching the slide or getting it dirty. Remove the slide from its envelope but only touch it by the edges of the film, never on its surface. During the whole cutting and mounting process it is preferable to wear cotton film handling gloves.

Slides returned in cardboard mounts should be remounted in plastic mounts as card mounts tend to bend easily and stick inside the projector. The card mount should be carefully separated at one corner and the two halves pulled gently apart. The piece of film should be handled by the edges only.

Mount the cut slides in plastic mounts wherever possible as these are strong and do not bend or warp. A range of plastic mounts is available and these are inexpensive. Try to purchase slide mounts of which the two halves are in different colours, or have other distinctive characteristics. Mount the slide as follows:

Insert the slide into the mount so that the back of the film faces the light or white side of the mount, or if the sides are the same colour, the side with the manufacturer's name on it. (Note. The back of the film is the shinier side, or the side on which any writing on the slide, or on the edge of the film reads correctly.) Make sure that the slide is positioned correctly in the centre of the mount before pressing or folding the two halves of the mount together.

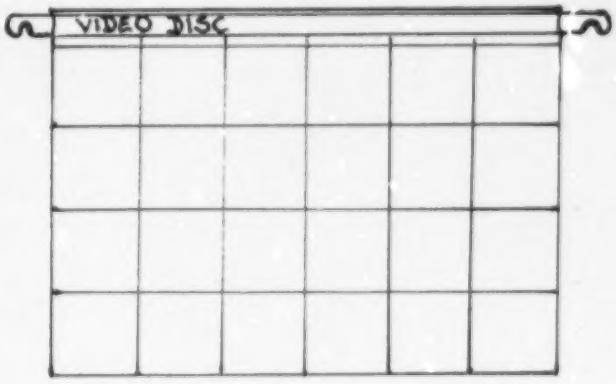
With a permanent OHT pen draw a spot on the bottom left-hand corner of the white or manufacturer's name side, with the slide in such a position that the picture is the right way up and any writing can be read. Some manufacturers' frames have a cut-out in the plastic. This should be in the same position as the spot as shown in the illustration. Alternatively, where the slide is part of a permanent sequence of slides, it can be numbered. Turn the picture upside down and write the number of the slide in the top right-hand corner of the mount with the OHT pen.



Provided the slide has been mounted correctly, it will always project correctly if it is placed in the magazine of the projector with the spot or nurber in the top right-hand corner and facing the rear of the projector.

Never use self-adhesive labels or 'spots' on plastic slide mounts. In hot climates they quickly drop off and if used in an automatic slide projector they can cause the slide to stick in the projector gate leading to teacher embarrassment and student laughter.

Storing slides. Teaching slides are best stored in transparent pocketed slide hangers which store up to twenty-four slides on one sheet and fit into a normal A4 office filing cabinet. These hangers can be obtained from manufacturers or can be produced by a local plastics company. A metal filing rod is needed to hang them vertically in the filing drawer.

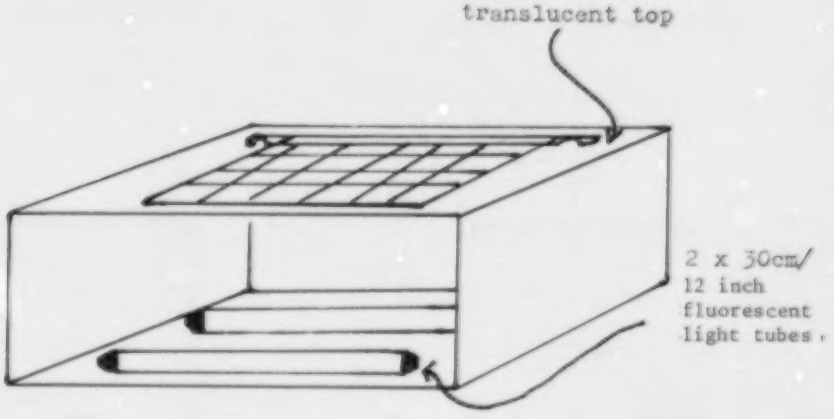


Slide hanger

Like OHTs, they can be arranged by subject, one subject to one or more slide hangers, and the hangers arranged in alphabetical order of subject.

In countries with high temperatures and humidity they should be stored in air-conditioned surroundings whenever possible. A packet of 'silica gel', a moisture-absorbing chemical, kept in the drawer will help to preserve the slides.

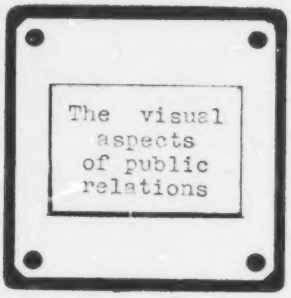
Slides can be viewed and sorted by the teacher on a light box, which is basically a box with a ground glass or translucent plastic sheet top with one or more short fluorescent tube lights underneath. Light boxes can be bought from manufacturers or can be made more cheaply by a local craftsman. The size of the glass lid should be big enough to allow a plastic slide hanger with its filing rod to lie flat on top. Tungsten lights should not be used as these get hot and could damage the slides.



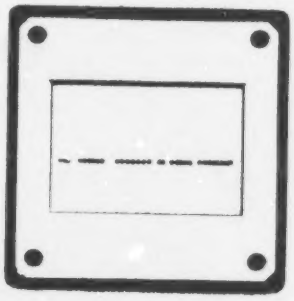
8.9 Caption and graphic production

Captions are slides that project written information--such as title and credit slides, lists of key points, etc. Graphics are slides which include word and pictorial detail, such as diagrams, charts, copies of maps or book text or illustrations or other printed materials. Both are made in the same way. Their use in a slide sequence should normally be limited to 10-15 per cent of the total number, the rest being purely pictorial. Captions and graphic slides should be produced with the same technical and aesthetic standards as the pictures, so that the overall impression of the sequence will be satisfactory.

Composition. Captions and graphics are useless if they cannot be read on the screen. The rules of composition apply, as does the rule about not wasting space on the slide. Waste space is waste film. The lettering on a caption or graphic slide should be large enough to be read with the naked eye.

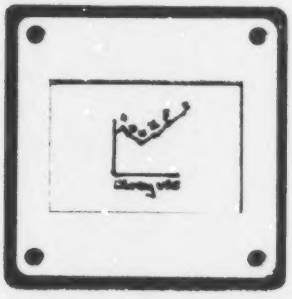


A good caption slide. The lettering is carefully composed to fill the oblong shape effectively, and is clearly readable.



A bad caption slide. Large areas of unused space, tiny unreadable lettering strung out in a long line ignoring the shape of the slide.

A good graphic slide. Simplified, easily readable block diagram. Good sized lettering. Uses oblong space and no waste film.



A poor graphic slide. Graphs are difficult to read on a slide as are other complex diagrams. Lettering too small, far too much waste space on slide.

These examples show that, if a caption or graphic is to be effective, it must:

Fill the usable oblong frame of the slide which has a ratio of 2:3.

Be limited to only a few words and a minimum of 25.

Fill the viewfinder of the camera when photographed and be well composed.

Be as simple as possible--a slide is not on the screen for long and the audience must be able to understand the information shown.

Not show the edges of pages or illustrations, finger tips or other unwanted detail. The audience should always see what appears to be an original picture, not an obvious copy.

Caption and graphic slide preparation. These can be made in a variety of ways depending upon whether the teacher has only a standard lens, a macro lens or some other means of achieving close-up focusing, such as a pair of extension bellows or a simple close-up lens. These latter items are less satisfactory and more time-consuming to use than the macro lens.

Caption and graphic preparation for use with the standard lens. The standard lens will have a minimum focusing distance of about 0.5m. The original caption or graphic will have to be large enough for the letters to be clearly visible in the camera viewfinder when the camera is set to its minimum focus. As this distance varies from one camera to another, the teacher will have to experiment to find the size of lettering he needs. A minimum of 2-3cm will probably be required. Captions can be made by:

Hand lettering with black letters on white or coloured paper. This needs to be done by someone with artistic ability. Otherwise the results will look amateurish even though the letters are the correct size.

Using a 'menu' board. These are boards covered in felt or made of black plastic which accept stick on letters about 2-3cm high. They are used in hotels and restaurants as bulletin or direction boards. The letters can be stuck on the board and composed to fit the oblong frame of the slide. Try to make the spaces between the letters as regular as possible. Do check the spelling carefully before photography.

Using magnetic boards. These are coloured metal sheets that accept magnetized plastic letters and can be used in the same way as the menu boards above. Most magnetic boards are black, but if colour is required a piece of thin coloured paper can be laid over the flat metal sheet and the letters will still adhere.

Using large letters from transfer alphabets on a white or coloured background. This must be done very neatly as magnification on to the projection screen will show up the tiniest error.

Graphics in books and on printed documents are rarely satisfactory for slide use. Also unless a macro lens or another close-up facility is available, they cannot be photographed to the correct size. Projected charts and diagrams must be very simple indeed, easy to understand and should fill the screen on projection. A graphic is used to convey a general idea or understanding, so if more detailed information is required, the audience will need a handout containing this information.

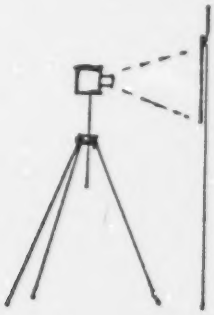
Charts and diagrams can be made from sheets of coloured paper, cut to size and stuck on to a coloured background. Lettering can be done with adhesive transfer letters. Magnetic boards and coloured paper can also be used.

Copying with the standard lens. The camera should be mounted on the tripod, and the cable release screwed into the shutter release button. The filter ring and a range of coloured filters should be made ready, and colour slide film loaded into the camera--daylight film when working with natural light, artificial light film when working with tungsten lights.

It must be remembered that the picture seen in the camera viewfinder represents only approximately 90 per cent of the picture that appears on the slide--that is, the viewfinder sees less than is photographed. For normal location shots this does not matter, but it is very important when taking close-ups, for if the edges of the caption may not be seen in the viewfinder, they may still be seen on the slide. Therefore, when taking caption or graphic shots, the picture should be composed in the viewfinder allowing for the 10 per cent additional space all around that the viewfinder cannot see. This is most easily done by lining up the picture in the viewfinder so that the caption or graphic looks correct, with no edges showing. Then move the camera closer by 10 per cent of the distance between the camera and the caption, refocus and take the picture.

Caption and graphic slides should always have a coloured background, as pure white light on the screen in a darkened room, hurts the eyes of the audience and should be avoided. All original captions made on white paper or with a white background should be photographed through a colour filter on to colour film. The filter is placed in the filter ring and screwed on to the front of the camera lens. This changes the colour of the background to that of the filter. Since the best combination of colours to use for captions is black letters on a yellow background, the yellow filter should be used. However, other light coloured filters can be experimented with, although the same colour and style of lettering should be used with all the caption and graphic slides in a sequence or programme.

The original caption or graphic should be fixed to a wall at camera height with even lighting falling on to it. The tripod and camera are then adjusted until the caption fills the viewfinder correctly, allowing for the 10 per cent edge the viewfinder cannot see. Focus very accurately. The reading for the exposure should



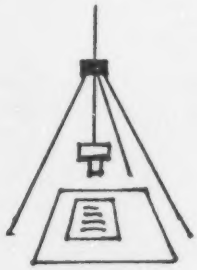
be taken off a sheet of grass-green or medium-grey paper held immediately in front of the caption. Never take a reading directly off a caption or graphic with a white background, as this can give an inaccurate reading. The reading and the photograph are taken with the colour filter in place, the exposure meter compensating for the effect of the filter.

Caption and graphic preparation with the macro lens or extension bellows. The macro lens makes caption and graphic production much easier as lettering can be prepared on a typewriter. An electric typewriter with a san-serif typeface and a clean plastic ribbon gives the best results, but a manual typewriter with a new ribbon will be acceptable. The caption is typed on to the middle of a sheet of clean white paper and composed to fit the oblong shape of the slide (ratio 2:3). Graphics can be made by drawing in thick black lines on the paper, with typewritten lettering as required.

Attractive captions and graphics can also be made by lettering with small white or black adhesive transfer letters on to OHT acetate. The acetate is then laid on top of a suitable picture in a book or other document, and covered with a sheet of plate glass to keep it flat, and the two documents photographed as one.

Copying with the macro lens or extension bellows. The legs of the tripod should be reduced to one section and the central column reversed. The camera can then be fitted to the bottom of the column, with the lens pointing down.

The caption or graphic can be laid on a flat surface and its corners pinned or taped down. The tripod is placed over the caption and the height and focusing of the camera is adjusted until the caption fills the viewfinder, allowing for the extra 10 per cent as before. The exposure reading is taken off a green or grey sheet of paper with the filter in place. The cable release must be used.



When copying from books or other documents in this way, the document or book can be held flat with a sheet of plate glass over the top. If there are any reflections off the glass in the viewfinder, these must be eradicated by repositioning the lamps before the picture is taken.

Make sure to avoid that the edge of the book, or the gutter, or any unwanted lettering (for instance the title under the picture) is photographed by moving the camera closer, or by masking off the unwanted detail with matt black paper before copying.

If the audience's attention is to be drawn to a particular feature on the slide, a small arrow can be used. This can be cut out from coloured paper and laid in position on the original document, pointing to the item of interest. Cover the document with the plate glass sheet, and then photograph.

8.10 Other uses of the camera

When technical staff and additional equipment are available, the camera can also be used for:

making copies of graphics produced by a graphic artist.

Where a copy stand is available this makes the copying process faster:

making duplicate copies of original slides;

copying from film-strip to slide, including enlarging from half-frame film-strip (18 x 24mm) to full-frame slide (24 x 36mm);

producing black and white and coloured prints to the required size.

9. TALK-OVER SLIDE SEQUENCE

9.0 Introduction

Individual slides or small groups of slides are regularly used to illustrate aspects of a topic. Sometimes longer sequences of slides can be used to cover a major subject as the teacher supplies additional information in a vocal commentary. During a class period where such a sequence is used, some time may need to be reserved by the teacher for an introduction or conclusion. Alternatively the class may be asked to discuss briefly what they have seen. Talk-over slide sequences constitute a very flexible medium. As new slides are photographed or acquired, they can be used to replace older outdated ones. The teacher simply adjusts the commentary to match the new slides. When such a sequence has been perfected and is expected to be useful over a period of time, the teacher may consider making it into a tape-slide programme.

9.1 Materials and equipment required

Slides, a light box for sorting and a slide projector (preferably an automatic, so that the teacher can operate the slides and speak from the front of the class) are required.

9.2 Production

9.2.1 Length

A talk-over slide sequence may last for up to half an hour, with a maximum of perhaps eighty slides. As a general rule, no slide should remain on the screen for longer than thirty seconds.

9.2.2 Slide sequences can be built up in two ways:

From a slide collection. The teacher, who regularly takes a camera with him on visits, is able to build up a collection of slides of value to his own teaching and to that of his colleagues. The colleagues' attention should be brought to the existence of this slide collection, particularly the slides that might be of interest to them in their teaching.

Slides from other sources. Slides can be purchased from a variety of sources, or borrowed from librarians and other colleagues. If a slide copying facility exists in the institution it is a good idea to obtain permission to have copies made when the slides are borrowed.

9.2.3 Making up the sequence

Once the aim and objectives are defined, the teacher can search the collection for slides that fit these requirements. At the same time the teacher should note where the collection is deficient so that gaps can be filled in. The selected slides can be placed on the light box and rearranged until an appropriate order is achieved.

9.2.4 The beginning and end of the sequence

It is important to start and end any sequence shown with a black slide, to ensure that the audience is not blinded with white light. When slides are returned from the processing station, the box usually contains one or two pieces of black film loaded in slide mounts. These should not be thrown away as they make excellent black slides. It is also possible to purchase solid plastic black slides for this purpose.

9.2.5 Pacing

It is also useful to have a selection of blank coloured slides for use in talk-over slide sequences. These may serve as an indication to the teacher and the audience that the ends of sections of visuals on one topic have been reached. The coloured blank slides are simply inserted in the sequence at the appropriate places. Such blank slides are easily made. When the film in a camera is nearly finished and the teacher does not wish to take additional photographs at that time, he may put a colour filter over the lens, point the camera at a sheet of white paper, take the reading directly off the paper and finish off the roll of film. Accurate focusing is not necessary but make sure that no edges show on the slide.

9.2.6 Caption slides

As the sequence becomes more established the teacher may prefer to replace the coloured blank slides with simple caption slides.

9.3 Commentary

It will be helpful for the teacher to go through the projected sequence once or twice and work out the commentary before he uses the slides with the target audience. This is especially necessary when the slides are not his own. The commentary can be written down if necessary, but presentation is much easier and more natural if the presenter simply speaks about each slide. The role of the commentary is to add information to that shown on the screen--the commentary should not simply describe what the slide shows unless an element of explanation is required.

9.4 Storage

The slide sequence is best stored in order, either in a slide magazine, or in plastic hangers.

10. SOUND RECORDING

10.0 Introduction

Original sound recordings are called master recordings. For important or unique recordings it is common practice to use the master, edited if required, for duplication purposes only. A duplicate copy is made from the master recording for normal use. If this is damaged, another copy can easily be made.

10.1 Equipment and materials required

Although sound-recording technology is constantly improving, the best master recordings are still made on open reel tape, using the fastest speed of the open reel tape-recorder. Such tapes can easily be edited to remove unwanted material. The quality of duplicates made from an open reel master is very good. Open reel tape-recorders are more expensive than audio-cassette recorders, however.

Audio-cassette recorders vary greatly in quality. Master recordings produced on the better audio-cassette recorders are of good standard, but some deterioration of quality will show in duplicates. Cassette recordings cannot be edited satisfactorily.

Thus the ideal solution is to make the master recording on an open reel tape-recorder and to make duplicate copies on cassettes for playback to students and for library use.

Cost, the availability of equipment and power supplies will usually determine whether a teaching institution has both types of equipment or uses cassette recorders only.

10.1.1 Open reel tape-recorders

A limited range of open reel tape-recorders is made, most of them having the capacity for making high-quality stereophonic recordings of music or speech. While in teaching library and information science the stereophonic nature of recording is not normally important, the same machines make high-quality monophonic recordings as well.

An open reel tape-recorder should have a recording deck capable of recording at 7½ inches or 19cm per second, stereo or mono-track selection and its own built-in playback amplifier and loudspeakers. Such machines are fairly expensive and are usually mains electricity powered only. At the time of writing, one good monophonic tape-recorder was still being produced. This is the Tandberg 1500, a robust, inexpensive open reel tape-recorder which will meet most teaching needs.

A few expensive, portable open reel tape-recorders are made which operate on mains electricity or batteries. These are ideal for doing interviews or on-location recordings, as well as for use in the home institution. The machine usually incorporates a small loudspeaker for immediate playback of an on-location recording. For the best quality of sound the machine needs to be connected to a high-fidelity sound system.

Nearly all tape-recorders are supplied with a microphone which is satisfactory for teaching purposes.

10.1.2 The open reel tape is $\frac{1}{4}$ of an inch or 6.5mm wide, and is wound on to reels of varying diameters. It is more expensive than an audio cassette, but is reusable when the original recording is no longer required. Open reel tape should be purchased from a reputable manufactuer who supplies tape that has readily distinguishable back and front. This makes editing much easier.

10.1.3 A tape editing kit

This consists of a tape cutting block, blank coloured tapes, and a special adhesive tape for joining lengths of recording tape. Never use ordinary transparent adhesive tape for this purpose. Sharp one-edged razor blades should be used for cutting the tape.

10.1.4 Cassette tape-recorders

While a limited number of high-quality stereo portable mains battery cassette recorders for specialists are made, these are as expensive as the cheaper open reel tape-recorders, and are not recommended for library and information science teaching. A wide range of cassette recorders intended for household and educational use are available internationally however, and the better ones produce good quality recordings of vocal material. Nearly all run on mains electricity or batteries and are easy to carry. Those which have an external microphone are to be preferred for teaching purposes.

10.1.5 Audio-cassettes

These use tape $\frac{1}{8}$ of an inch or 3.25mm wide and are recorded at $1\frac{7}{8}$ of an inch or 4.75cm per second only. Purchase audio-cassettes only from a reputable manufacturer. Those with screwed cases are to be preferred as they make possible some degree of repair.

10.2 Using the tape-recorder

Open reel and audio-cassette recorders function in the same way, except that the open reel tape has to be threaded on to the machine by hand and may be operated at two or three recording speeds. The fastest speed should always be used for master recordings and for recording music.

The phrase 'tape-recorder' will be used in this document to mean both audio- or open reel or cassette recorders.

The teacher should familiarize himself with the operation of the tape-recorder by studying the manufacturer's handbook.

The teacher must be able to:

Identify the on/off switch.

Load a tape or cassettee on the machine correctly.

Identify and operate the fast forward, fast rewind and the stop controls. The stop control must be used between every tape movement on most tape-recorders.

Identify and operate the play control, as well as the output volume control (on some machines this is the same control as the recording volume control) used to increase and decrease the loudness of a pre-recorded tape.

Identify the microphone input socket and plug in the microphone correctly.

Identify and operate the recording controls (the play and record controls have to be operated together on all but the most modern machines).

Identify the recording volume control(s) and use it in conjunction with the recording level meter(s) to make a recording on to tape. (Note. The output volume control must always be 'off' when a recording is being made or an unpleasant howling noise will be emitted by the machine!)

Identify the pause control, if one is fitted, and operate it during both recording and playback.

Identify and operate any additional facilities on the recorder, such as extension speaker sockets, headphone sockets, output sockets, tone controls, track selector switches, monitoring facilities (listening to the recording on the tape after it has been made, through headphones to check that it is correct).

Identify the input sockets for a record turntable, another tape-recorder or radio, and finally should practise making recordings from disc, radio or tape.

10.3 Methods of making recordings

Most recordings for teaching purposes will be made using a microphone. They will include scripted commentaries, interviews and lectures.

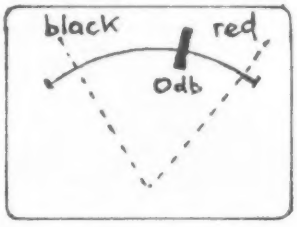
Other recordings will be made by connecting the tape-recorder with the appropriate connecting leads (usually supplied with the machine) to another tape-recorder, radio or record turntable. This technique will be used for copying tapes and cassettes, discs and radio broadcasts. The microphone should not be used for this kind of copying since it will produce copies of inferior quality and will simultaneously record any extraneous sounds.

10.4 Using the recording level meter

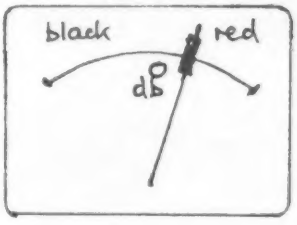
Whether recording is done through a microphone or by copying from a tape-recorder, turntable or radio, good quality recordings can be produced only when the recording level meter is used correctly. Incorrect use will give either a recording that is far too quiet or a noisy, distorted one. The meter functions when the recording control is set and the input volume control is operated.

The scale of the meter will be marked in 'db' or decibels or in percentages. At the Odb or 100 per cent point of the scale, the scale changes colour to red. If the needle goes into the red sector, over-recording may take place which will make the voice sound unnatural and distorted.

The secret of good recording is to operate the volume control at a level where on the loudest words or notes the recording level needle just touches the red sector of the scale. When that level is found, the volume control should not be touched again until the recording is completed.



Loudest notes--incorrect



Loudest notes--correct

Use of recording level meters.

A test recording to determine the correct position for the volume control should be made before every recording, as every situation will be different.

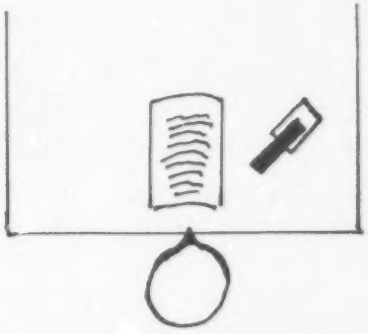
Limiter switch. Some tape-recorders have a limiter switch which artifically reduces the volume of the loudest sounds and stops the needle going into the red sector of the recording level meter. The test recording must be done with the limiter switch off--it should be turned on only after the test recording is made.

Automatic level or gain control--ALC or AGC. These switches should be left off during the making of a master recording. They can be used for recording a lecture of a meeting when they perform automatically the work of the volume control and recording level meter. The results are not as good however.

10.5 Use of the microphone

Whenever possible the microphone should be mounted on either a small desk stand or on a floor stand. If no stand is available the microphone should be lodged firmly on a pile of heavy books at a height of about 6 inches/15cm above a desk or table top and pointed directly at the speaker. Neck microphones--small microphones with a neck band and a long connecting lead, can be used when recording a lecture--provided that they allow the lecturer to move around as he wishes. The microphone should not be held in the hand during a recording unless this is unavoidable. This causes crackles and rustles in the background of the recording.

The microphone should be positioned between 1-1.5 feet or 30-45cm from the speaker's mouth and be placed either to the right or left and not directly in front of the speaker as this can cause sibilance (hissing when letters s, sh and c are used) on the recording.



Position of speaker and microphone.

10.6 Creating a suitable recording environment

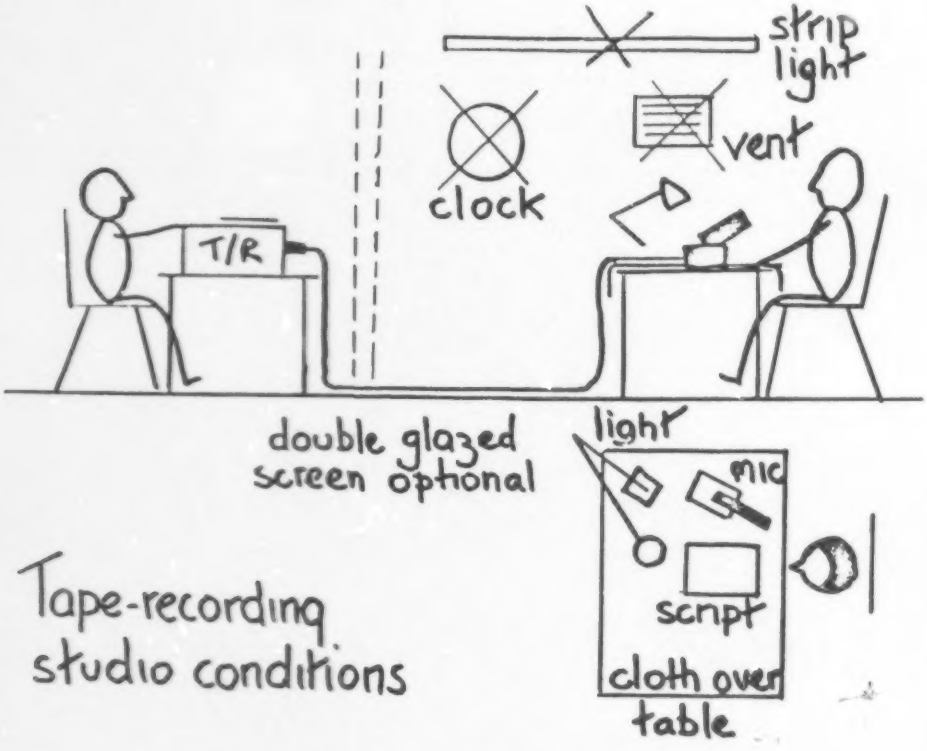
The microphone cannot distinguish between the sounds it picks up. It is therefore necessary to record in surroundings where the speaker's voice is the only sound to be heard--unless background noises are important to the learning process.

Find the quietest room in the building. Normally a room with carpets and soft furnishings, curtains, cloth covered chairs or wall hangings will be best as these will cut down the harshness and echo of a recording made in a sparsely furnished room with bare floor and walls.

Fasten notices stating 'Recording in progress--please be quiet' to the outside of the door of the room, and on any other nearby doors that might be banged during the recording. Close the door of the recording room and, sitting quietly, try to identify sources of noise in the room. However soft, the microphone will pick them up and record them as a general hum in the background.

The more usual sources of background noise are clocks, fluorescent light fittings, air-conditioning or heating, footsteps on the floor above. Try to eliminate as many of these as possible--turn off the air-conditioning, remove the clock and use an ordinary desk lamp of the tungsten bulb variety.

Set up the tape-recorder on a separate table as far away from the speaker as the microphone will allow. It is possible to purchase or have made, extension microphone cables, but they should be checked to ensure that they do not produce a 'hum' on the recording. Give the person who is to operate the tape-recorder a comfortable chair.



Set up the speaker's position. If there is more than one speaker, position the microphone midway between them and about 1.5 feet/45cm away from their mouths.

If the speaker is reading a script, he should be seated at a table which has been covered with a cloth to deaden sound. The individual sheets of the script, if there are more than two, should be mounted on sheets of heavy cardboard. Sheets of paper moved near a microphone cause paper rattle on the recording, sheets of cardboard can be moved quietly.

Recording in the open air. When recording in the open air, the passage of even a slight wind over the microphone causes hiss on the recording. This can be reduced by using a small foam rubber or plastic cap that fits completely over the head of the microphone. A suitable one can be easily made, if it is not possible to purchase one.

10.7 Making the microphone recording

Before starting the recording, the tape-recorder operator should check his equipment and then ask the speaker or speakers to read some of the script or talk to each other as they will during the recording. The tape-recorder operator can then do a short test recording to set the correct recording level. This can be played back to check that everything is correct. The actual recording should be made as follows:

The recording session should begin in total silence, the recorder operator communicating to the speaker by signs.

The operator should put the tape-recorder into the record mode, set the volume to the predetermined level and sign to the speaker to begin.

The speaker should record an identification at the beginning of the tape. This should be a short title or a brief description of the recording, followed by 'take one'. Second and third attempts should be carried out on fresh tape and announced by the title and 'take two', etc.

Record a period of silence lasting thirty seconds between the words 'take one' and the first word of the commentary. This allows for the later addition of music, or for copying from the master tape without including the identification.

The speaker should then record the commentary or the interview should take place.

A further thirty seconds of silence should be recorded at the end of the commentary or interview. The volume control can then be turned slowly and smoothly to the zero position and the recorder turned off.

Mark the details of the recording on the tape box, noting clearly that it is a master recording.

10.8 Dealing with errors during a recording

If a mistake is made during the reading of the commentary or an unwanted interruption occurs during the interview, the speaker should pause for five seconds, and then repeat the sentence in which the mistake was made. The tape-recorder must be left running with the volume level unchanged. The error can be located afterwards and the incorrect sentence edited out.

10.9 Making a recording from another tape-recorder, turntable or radio

A similar process is used when making a duplicate copy from a master tape. It is not necessary to maintain silence during the copying process as the recording is done by linking the two machines together electrically.

Connect the output sockets of the radio, record turntable or tape-recorder to the input sockets of the tape-recorder on which the recording is to be made. The instruction book will specify which cables should be used if these are not supplied with the machine.

Play the tape to be copied, or operate the turntable or the radio. Using the volume control and the recording level meter on the copying tape-recorder, make a test recording to determine the correct recording volume. If copying music, the loudest part of the recording should be tested. Play back the recording, check the quality and rewind the tape.

The recording procedure should be carried out as follows:

Prepare the open reel or cassette tape on which the copy is to be made so that the end of the leader tape (the blank tape at the beginning and end of the tape) and the beginning of the recording tape is over the recording head of the tape-recorder.

Put the copying tape-recorder into the record mode, but with the pause control on. Adjust the recording volume control to the predetermined level.

Lower the stylus on to the disc or start the tape to be copied just before the recording commences, or wait for the announcement of the selected radio programme. Just before the first sounds are played back, release the pause control on the copying tape-recorder--this will give a smooth start to the recording.

The pause control on the copying tape-recorder can be used when changing the record or the original tape on to its second side, so that there will be hardly any break in the copy.

At the end of the programme, fade the recording volume control to zero and switch off the tape-recorder and other equipment.

Mark the details of the recording on the tape box.

10.10 Tape editing

This is a simple process for removing errors or unwanted material in master tapes made on an open reel tape-recorder:

Play back the master tape until the sentence containing the error is found. Stop the tape-recorder.

Wind back a little way and replay until the end of the previous sentence is heard. Stop the tape-recorder at the end of that sentence. If this has not been easy to identify, replay this sentence at the next slower speed on the tape-recorder--the words will still be heard but much more slowly so that the end of the sentence can be identified more easily. Some tape-recorders are made so that the tape can be moved manually over the tape heads which makes identification even easier. The instruction book should indicate if this is possible.

Mark the back of the tape with an overhead transparency pen or wax pencil where it touches the playback head. Make a prominent mark since otherwise it will not be easy to find later.

Play the tape again until the error passes and the beginning of the corrected sentence is heard. Stop the tape and wind back a little. Replay again, listening for the intake of breath by the speaker before the first spoken word of the corrected sentence. This is easier if the tape is again played back more slowly. Mark the tape over the playback head about 2 inches before the intake of breath.

tape direction →

intake of breath ▮ - five second pause - error here - ▮ previous sentence

Mark before intake of breath.

Mark at the end of previous sentence.

Pull the tape gently off the reels until both marks are visible.

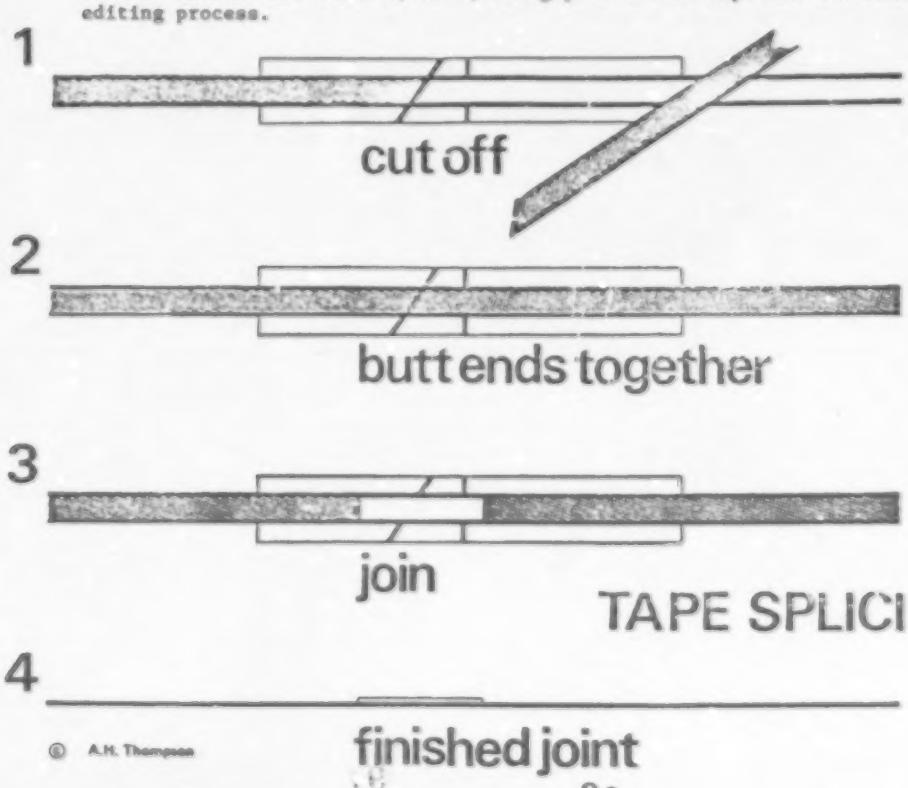
Using the tape cutting block and the sharp razor blade, cut out the length of tape between the two marks. A 45 or 60 degree cut should be made depending on the block used. Do not use the 90 degree cut as this would cause a click in the recording. Keep the removed piece of tape in case of error, until the edit is deemed correct.

Butt together, but do not overlap the two cut ends in the block so that no light shows between them. A really sharp blade is essential to produce neatly cut ends.

Cut a 1 inch or 2.5cm. length of tape-joining tape. Stick one end on to the edge of the razor blade to make it easier to handle. Lay this over the join in the recording tape and press it down with the soft part of the finger, not the nail. No air bubbles should show when the tape is properly pressed down.

Replay the section of the tape with the join. The error should have been removed and no audible sign of the edit should be heard.

If the edit is not correct, redo, using part of the tape cut out during the editing process.



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10.11 Interviewing techniques

When recording an interview in the institution or on location, careful advance planning by the teacher will produce a more effective result.

Planning for the interview. First, decide where the interview is to be held.

If the interview is to be recorded on location, identify a suitable room. Is there a supply of mains electricity? What type of furnishing does the room have?

Prepare suitable equipment and accessories. These include a mains extension cable with the correct plug fittings or adaptors, a screwdriver and pliers, a spare fuse for the plug, the tape-recorder, microphone with stand, and recording tape.

Plan the outline of the interview--aim, objectives, etc. Do some research on the person to be interviewed. List some initial questions.

Preparing the recording location. Try to prepare the recording environment before the interviewee arrives. Check the room for unwanted noises and eradicate as many as possible.

Set up the equipment and check that everything is working. Put up warning notices if this is appropriate. Set comfortable chairs for the participants as far from the tape-recorder as possible.

If the teacher is carrying out the interview, it is preferable that someone else operates the tape-recorder. If this is not possible, the teacher can conduct a voice test to set the recording level. Then the teacher should start the tape-recorder in the recording mode, adjust the volume, and go and join the interviewee, commencing the interview fifteen seconds after he has sat down.

Record an identification on the tape before the interviewee arrives.

Conducting the interview. Have only the interviewer, the interviewee and the tape-recorder operator in the room. The presence of more people can be distracting and produce unwanted noise or interruption.

Make sure the interviewee is as relaxed as possible. Talk with the interviewee for a short time before the interview begins. Explain the sort of questions that will be asked at the beginning. While this is happening the tape-recorder operator can be making a test recording.

When the interviewee is at ease begin the recording. The first few questions should be general and may be edited out later. Their purpose is to get the interview going. Then follow the plan of the interview, starting with a planned question and letting each subsequent question follow logically from what the interviewee has just said. Phrase questions so that the interviewee has to talk about a subject, not just give yes or no answers. Listen carefully and try not to interrupt. Avoid verbal agreement and encouragement. Nods and smiles are more effective and lead to a better tape-recording. Remember that the recording is of the interviewee, not the interviewer.

When the aim of the interview has been achieved, bring it to an end with some suitable statement to give a sense of completion or finality. If the interview has taken longer than expected, some editing can be done later.

After the interview. Replay some or all of the tape to the interviewee. If he is unhappy about any comment, make a note and edit it out if this is what he wishes.

If it is felt that something important has been left out, record a further short sequence immediately, using exactly the same recording volume level as before. This sequence can be edited in later.

On return to the institution edit the interview as required. The final version should be played to the interviewee for his approval before use and a duplicate made for teaching and library purposes.

10.12 Storage of tape and equipment

Tapes should always be stored in their containers, with the contents clearly marked. Master tapes should be stored in a separate sequence.

Always listen to the beginning of a used tape before re-recording it, to be sure that a master tape, misfiled in the wrong box, is not being used.

In hot, humid weather conditions, tapes are best stored in an air-conditioned room to avoid fungal growth. They can be stored on wooden or metal shelves.

Tape-recorders should be kept under covers, as dust can lead to poor recording quality and cause damage to tapes.

11. TAPE/SLIDE PROGRAMMES

11.0 Introduction

The tape/slide programme is essentially a combination of the talk over slide sequence and the sound recording. A tape/slide programme can be defined as a sequence of slides shown at appropriate points during a recorded commentary.

The tape/slide programme is the first of the two more ambitious aids considered. It is an ambitious aid firstly because it is a complete programme and second because new and time-consuming production techniques have to be used. It requires the same equipment for production and playback as the slide and the sound recording, although where automatic synchronization is used, a further piece of equipment, a slide synchronizer, is required.

There are several forms of tape/slide programmes:

The manually synchronized programme. Here the presenter keeps the slides in synchronization--that is, he ensures that slides change at the appropriate time--with the recorded commentary. He does this by listening to the commentary while reading a written copy of the script which is marked to show where the slide changes should take place. He operates the slide projector when instructed to do so by the script.

This form of programme is the most easy to present as it requires only a cassette or open reel tape-recorder and either a manual or preferably an automatic slide projector. It is best used for group presentation, rather than for individualized study. Because of the simple method of presentation, this form of programme can be made and used anywhere by any teacher. Even automatically synchronized programmes can be presented using this method when a suitable slide synchronizer is not available.

The audibly synchronized programme. Here the presenter or viewer keeps the slides in synchronization by changing a slide each time he hears an audible signal recorded in the commentary. This form of programme also requires only simple equipment for presentation. A cassette-recorder and a hand slide viewer are all that is required for individualized study. Because of the repetitive audible signal in the commentary, it is not recommended for group presentation as the audience quickly recognizes the signal and this can lead to inattention, negating the message of the programme.

The automatically synchronized programme. Here the slides are changed automatically by unaudible signals recorded on a separate track of the commentary tape. This form of presentation requires additional equipment--either an open reel tape-recorder operating in conjunction with a slide synchronizer, or a specially manufactured audio cassette-recorder incorporating slide synchronization facilities. An automatic slide projector is essential. This is therefore a more expensive method in terms of equipment, but does ensure the most effective presentation every time. It is suitable for either group viewing or individualized study.

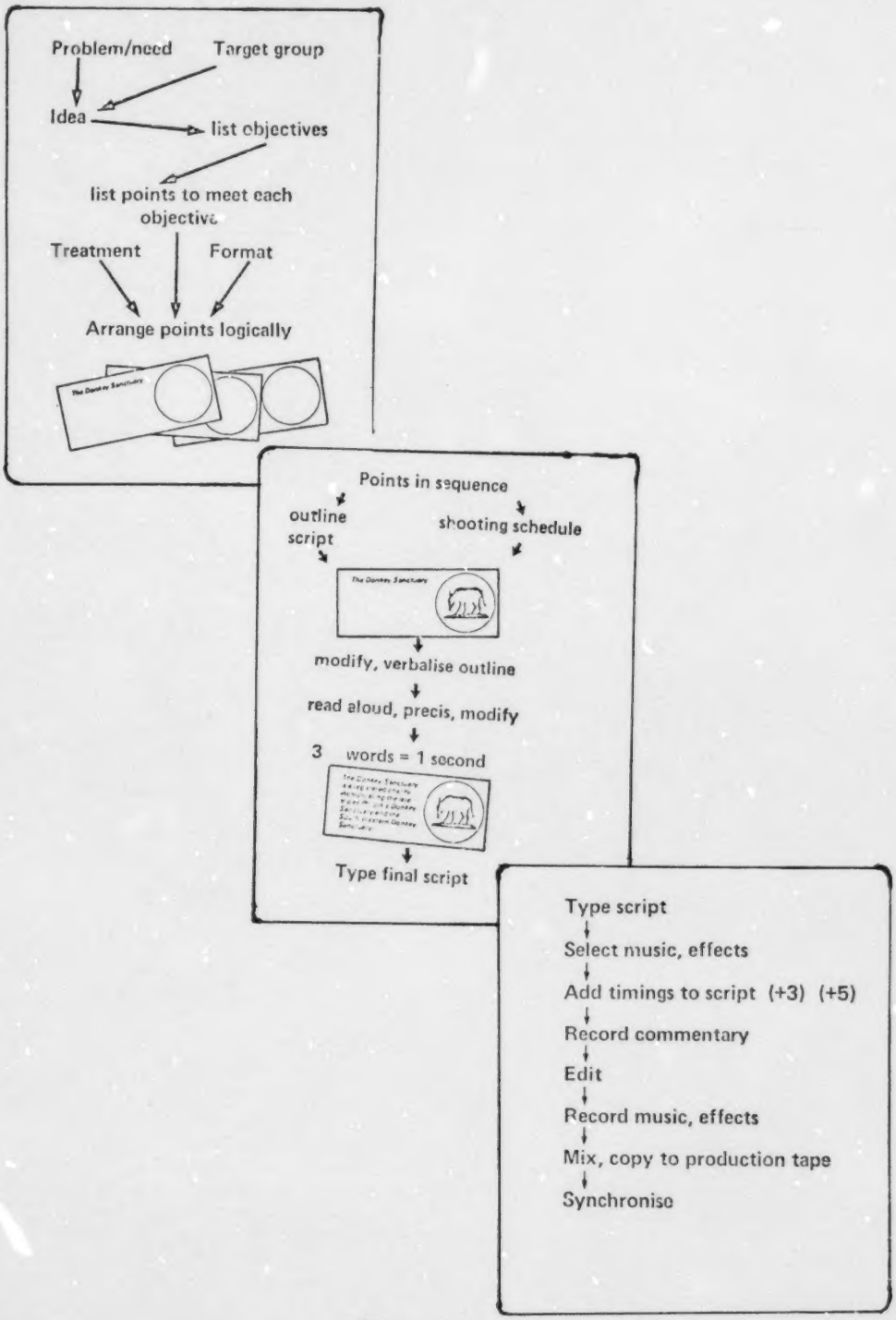
Multivision. This is the name given to tape/slide programmes which use two or more automatic slide projectors operating simultaneously. This creates attractive optical effects on the screen as the slides fade in and out. It is a complicated system to produce, as it requires two or more automatic slide projectors and an expensive slide synchronization system which may have to be programmed by a microprocessor. As a mechanism for teaching librarianship and information science it is not more effective than the other forms and is therefore not recommended.

11.1 Production

Production techniques incorporate those of slide and audio recording plus the addition of scriptwriting and synchronization.

Teachers can easily achieve professional standards with tape/slide programmes. A tape/slide programme is designed to stimulate and inform, to encourage discussion or further learning. It is therefore a compact, fast moving presentation which can have all the attributes of a good television programme or film except that it has still, rather than moving pictures. In practice, very few programmes for teaching library and information science require moving pictures. It is therefore essential that any would-be producer critically watches good and bad television programmes, films and tape/slide programmes to learn from other people's experience before commencing a programme himself. The techniques used and the pacing are very similar in all these media.

11.2 Stages in making a tape/slide programme



11.3 Planning

The initial planning stages covered in section 6 - Planning the Audio-visual Aid, must be followed in great detail. Any weak link or incorrect analysis will lead to a poor programme. As recommended, points should be written on individual cards.

11.4 Treatment or style of presentation

Tape/slide programmes give the producer an opportunity to use an imaginative story-line or a style of presentation which will effectively communicate a message to the specific target audience.

11.5 Format

Unless real movement is essential to the learning process the tape/slide format should always be chosen for audio-visual programmes which are presented frequently.

11.6 Arranging points logically

The cards containing the points should be arranged in the order dictated by the story-line or style of presentation.

Additional linking material to satisfy the requirements of the story-line can be added to the sequence, but take care not to add further points of information. The original analysis of the programme (see 11.3) should be maintained.

It is important to take a great deal of care with this planning stage of the programme as the sequence of points arranged in the appropriate order becomes the outline script of the programme. When the sequence is established it will be helpful to pin the cards in order on to the a wall board. This then becomes a story-board and is easy to work with.

11.7 Shooting schedule

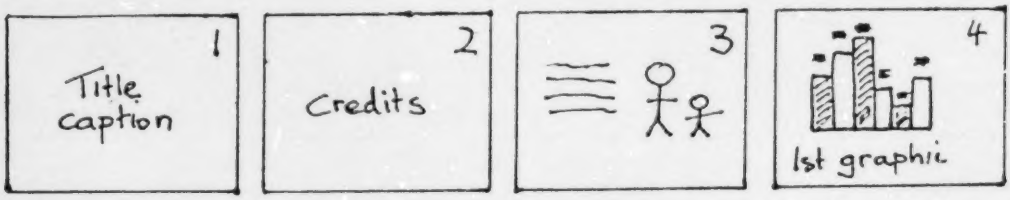
It is now necessary to consider each written point carefully and decide what visual information is required to communicate the point successfully. An understanding of the saying 'a picture speaks a thousand words', is critical to tape/slide and talk over slide sequence production.

Whenever possible the pictures should be the most important element in a programme. Pictures first, words afterwards.

If the picture is well chosen and contains most of the information required to express the specific point, then fewer words will be needed to complete the information for the viewer. This makes script-writing easier.

Most of the pictures required will probably have to be taken specifically for the programme if they are to fulfil their role. Draw or write the information describing the picture required on the right-hand side of the card. If the teacher is to take the pictures, some detail should be recorded to serve as a reminder when setting up and taking the picture. If someone else is to take the picture, then it is vital that the fullest possible detail be given, with instructions specifying such details as 'close up', so that the picture required is taken. Whenever possible, the teacher should accompany the photographer and check the viewfinder of the camera.

When the story-board is complete--with a card representing every slide in order, and each card containing the specific point to be illustrated--number the cards in sequential order. They can then be rearranged during the production process but easily returned to their original order. This will also eliminate the need for a second list for the shooting schedule.



Now rearrange the cards so that those for all captions and graphics are in one group, all location slides to be photographed in another and those for all the slides he may already have in a third. Rearrange the location shots into the order in which they will be most economically photographed--for instance all the exterior and interior shots of library X, the exterior and interior shots of library Y, those pictures to be taken at the railway station, those that can be set up in the teaching institution, etc. It is important to do this correctly as it will avoid the necessity of returning to library Y just to get the one picture that was forgotten on the first visit.

The photography can now be done. Captions and graphics can be made and photographed at the same time as the location shots. It is also a good idea when on location to take a few extra pictures of things or situations that may be useful later, or a second shot of a required situation from a different point of view. This will provide the teacher with more slides for his collection and some additional slides for the programme should these prove necessary later on.

When taking the photographs the teacher should have the sequence of the programme in mind. For instance, if photographs are taken over a period of a few days but are intended to represent a single day in the programme, it is necessary for the staff in the pictures to wear the same clothes, or maintain the same hair styles. Or if a period of time is supposed to have elapsed during the programme, different clothes should be worn. The weather for exterior shots of the same library is important. Do not take one in sunlight and the other in rain; the audience will notice.

If it is intended to distribute copies of the finished programme or to make a second copy to put into the library of the institution, it is good practice to take two or more shots of each scene so that two or more complete sets of slides can be produced immediately. It is less expensive and time-consuming to do this than to have the slides copied in small numbers later.

When all the slides have been returned from processing and any others added, the story-board cards should be returned to their original numerical sequence and the slides arranged in the same order. Spare slides can be kept to one side for use later. The required slides should now be remounted into glass and plastic mounts if the teacher is in a temperate country. This will keep the slides in correct focus during projection. Glass mounting is not recommended for a master set of slides, or in tropical countries where condensation gets caught between the glasses and leads to problems in projection and storage. Number each slide in the 'spotting' position with a water-based OHT pen, as these may not be the final numbers in the programme.

11.8 Modifying the outline

This involves comparing the sequence of slides with the story-board--checking the content of each slide against the specific point to be made and making any amendments to the story-board.

11.9 Timing the slides

Each slide should now be projected and a decision taken by the teacher and, when practical, a member of the target audience as to how long the slide should remain on the screen, that is, how long it takes to absorb the message.

This period in seconds, plus one second to allow for the projector to change the slide, should be entered on the story-board card. The duration of projection of the slide will depend on the complexity of the picture and the target audience for whom the programme is aimed and their level of pictorial literacy. On average, for a pictorially literate audience, a picture needs a visual length of seven seconds. In practice this should vary from three to twelve seconds depending on the amount of information in the picture, the presence of known or unknown objects and clues to aid recognition. This timing is very important as a picture left on screen for too long will cause the audience to lose concentration.

Captions and graphics timing. Captions and graphics should remain on the screen three times as long as it takes the teacher to read them, as not all the audience will read at the same speed.

11.10 Script-writing

Script-writing is a fascinating task, a skill which improves with experience. If this guide is being followed, the teacher will avoid the mistakes so common in first-time scripts.

Pictures first, words second. The words flow out of the pictures, not the other way round. The visual length of the picture cannot be extended or truncated without damage to the programme. Words, which are flexible, can be cut or expanded or indeed replaced by silence while a picture is being viewed.

Script equals conversation. A script is meant to be listened to, not read. This means that the style of the script should be conversational, not literary. It should be written as a conversation is spoken, with short succinct sentences, simple words and phrases that are easily assimilated. There is no place in a script for mellifluous verbosity. The text must be easy to read aloud. This approach to script-writing cannot be emphasized enough. Too many scripts fail because of lack of understanding of the role of the script.

How much script to write? A commentator or script-reader will say three words a second. As the visual length of the slide including the change-over time is noted on the story-board card, it is simple to deduce the maximum number of words that can accompany each picture.

Number of words = (visual length of slide +1) X 3. Thus, based on an average of 7 seconds viewing time for a slide, plus 1 second change-over time, the maximum number of words would be 24. On this basis, the writer should use approximately 7 slides a minute and the programme should not last longer than 12-14 minutes.

If the writer finds it essential to use more words than the slide will allow, then insert an appropriate spare slide taken on location, spreading the words over two slides, rather than leaving the original slide on the screen longer than it should be.

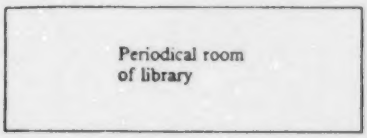
If there are not enough words, then leave a pause between sentences, not during sentences.

When writing the script for a programme, which includes caption or graphic slides, ensure that the script contains pauses long enough for the audience to read and understand the contents of the caption. An audience cannot listen to one set of words and read another at the same time.

Examples of scripting problems. Some examples from real scripts, with the authors revisions, will illustrate these and other problems encountered during script-writing.

Pictures and words must complement each other. Words must not repeat what the picture shows.

Slide 1



Original script 'The methods of displaying current periodicals in libraries are influenced by the amount of floor space available.'

Revision Drop 'in libraries'.

Slide 2

Original script 'Earlier issues of back numbers of periodicals are often shelved flat below the recent numbers on the regular shelves behind or under sloping shelves. The disadvantages of this method...'

Revision 'Back numbers are often stored underneath the display shelf. The disadvantages are...'

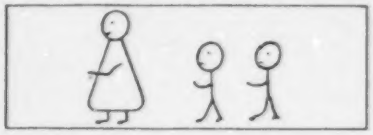
Slide 3

Original script 'Informal and comfortable chairs and tables should be located conveniently near to the periodicals in the reading area. In fact, this could be the most attractive part of the library, suitable relaxation as well as research work.'

Revision 'Informal and comfortable study facilities should be located nearby, making an attractive area for research or relaxation.'

Do not make direct reference from text to picture unless it is absolutely necessary.

Slide 4



Original script 'On the tenth day the Olowo comes out in his ceremonial robe as in the picture. The Olowo in now...'

Revision Drop 'as in the picture'.

Original script 'The Olowo will dance from his palace to all the corners of the town as this picture shows.'

Revision The picture cannot show this; therefore this fact must be written into the commentary to add information to the picture.

Accurate wording. Take care to use the exact word.

Original script 'Periodicals cover the whole field of knowledge and range from the academic to the cheap magazine.'

Revision Use 'popular' not 'cheap'.

A script is an oral presentation not a written one. The words must be easy to say.

Original script 'When the periodicals arrive in the library, after having been recorded they must be attractively presented and...'

Revision 'After the arrival of a new periodical has been recorded, it must be attractively displayed and...'

Be precise and economical with words. Short sentences are easy to listen to and lead to word economy. Cut to the bare essentials.

Original script 1 'Whichever method is used the display should be arranged artistically or much of the effectiveness will be lost, particularly when taller and thinner journals are allowed to droop or when the magazines in front conceal the covers of those behind.'

Revision 'Whichever method is used, display them artistically or much of the effectiveness is lost. Taller and thinner periodicals will droop or those in front conceal the covers of those behind.'

Original script 2 'Another alternative to binding for preservation of the periodicals is the purchase of microform copies which cost little and save space in store--about twenty times less than a bound copy.'

Revision 'An alternative to binding is the acquistion of microform copies. These are economic to buy and save 90 per cent of the storage space.

Be consistent. In the previous examples, 'periodicals', 'journals' and 'magazines' have all been used to mean the same thing. Choose the appropriate word and stick to it, i.e. 'periodicals'.

Aim and objectives. State the aim and objectives of the programme near or at the beginning of the script where this is appropriate.

'The objectives of this programme are to show, first, the types of information materials available, and second, that these new materials do not present the librarian with any new problems.'

List of points or items--pacing and pauses. Where lists of items have to be made, it is best to bring them together into sentences, with pauses between the sentences, rather than have pauses in the sentences.

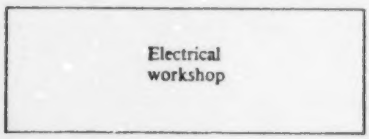
((+3) within the script means a pause of 3 seconds in the spoken commentary.)

(An asterix * indicates the position of the slide change point.)

Slide

The British Government built technical schools where technicians learned about motor vehicle mechanics, (+3)

Slide



* electricity and electronics, (+6)

Slide

* and workshop technology, (+6).

Revision

This gives a long and very disjointed sentence that does not sound correct when spoken in the commentary. Rewrite as follows:

Slide

* (+3) The British Government built technical schools where students learned about motor vehicle mechanics, *(+1)

Slide

electricity and electronics.(+5)*(+*)

Slide

Students were also taught workshop practice.(+5)*

Original script 2 The birds that can be seen on the mountains around Toridon include robins,(+3) *wagtails,(+6)* chaffinches,(+6) *buzzards,(+6)* and occasionally golden eagles.(+5)*

Revision Here more words would be better than fewer.

(+3)Robbins are among the many varieties of small birds regularly seen on the mountains around Toridon, as are chaffinches.(+3)* Both yellow and pied wagtails can be found in large numbers. (+2)*(+2)The common buzzard can be spotted soaring above wooded areas on the* lower slopes,, while golden eagles can occasionally be seen above the mountain tops.(+2)*

Write specifically for your target audience. Example--a target audience of 15 year-old schoolchildren.

'The information lies in the Woolley collection. It houses antiquarian books, maps and articles. Other services of the library include talks and lectures.'

Comment. This may be meaningless to a 15 year-old. Examples would be more stimulating.

Make positive statements

Original script 'Some books are not allowed to be borrowed.'

Revision Making a positive rather than a negative statement.

'You will all need to refer to some books regularly. Therefore they are kept in the library so they are always available for use.'

Professional jargon. Avoid this at all costs, keep it simple.

Original script 'Refer to the catalogue to know the location of the library materials. It is arranged in alphabetical sequence by the authors names, titles or subjects. The call numbers group together books on the same subject in one place.'

Revision Details of all books in the library are recorded in the catalogue. Ask the staff to show you how to use it.

Endings. Do not leave the audience in the air at the end of a programme. Write a definite closing remark, for example:

'for information materials, regardless of their format, are the tools of all librarians'.

Evaluate, read aloud and modify. When the teacher has written what he believes to be the final script, he should read it first aloud while watching the pictures, then into a tape-recorder and listen to it carefully once or twice. Change or remove the irritating phrases that repeat themselves, and the word which is used fourteen times in the first two minutes. Get a colleague to listen to the revised version, while watching the pictures. Amend again.

11.11 Typing the final script

To enable the script reader to easily read the script, it should be typed using upper and lower case letters if the language uses them. The typing should be double spaced. The script sheets should then be duplicated and one set provided for each person involved in the technical production. The set for the script-reader should be stuck on to heavy cardboard to avoid paper rattle when recording. An example of a finished tape slide script is given on p.100.

11.12 Selecting music and sound effects

Due to the influence of radio and television it has become conventional to begin and end a programme with music. It is not necessary for teaching purposes to obey this convention. Essentially music and sound effects should only be used when they actually contribute to the learning effectiveness or emotional appeal of the programme. The use of music in some countries brings with it problems relating to copyright and public performance, and although these problems have been partly solved by the sale of special records and cassettes which the producer can use in programmes, the type of music available will not always be relevant. Thus if the programme can stand on its own without music it should do so.

Sound effects' records and cassettes are available from a number of suppliers, but the necessary sound effects can often be recorded live by the teacher, which presents no copyright problems. The sound of a telephone bell or a computer printer may well be helpful in a library or information science programme.

Where they are necessary, music or sound effects should be carefully selected and timed, then recorded on to open reel tape for later copying on to the master commentary tape.

11.13 Adding timings to script

The script should be marked with any necessary pauses required during its recording. This is best done by marking the script at the appropriate place (+X), X being the number of seconds required. A pause of 30 seconds (+30) should be left after the identification and before the beginning of the commentary. Pauses need to be marked in at the end of sentences or at the beginning, where the number of words used are insufficient to cover the visual length of the slide they accompany. Pauses must be marked in at this stage--they cannot be added after the script has been recorded.

11.14 Recording the commentary

This should be carried out as described in Sound recording, in section 10.

COLLEGE OF LIBRARIANSHIP WALES

TAPE SLIDE PRODUCTION SHEETS

TITLE BOOKBOAT 'EPOS': a cultural centre afloat SHEET NUMBER 1

Duration: 17 minutes 15 seconds.

PICTURE NUMBER	PICTURE	COMMENTARY/	
1	[Blank - black]	[None] (Fade up music) ↓ (10 SECONDS) *	15 SECONDS
2	Bookboat 'Epos' - port side - - full speed ahead -	[None] (Fade down music behind voice) ↓ (5 SECONDS) *	
3	Same as 2 with caption: Bookboat 'Epos': a cultural centre afloat	This is the story of a library boat - an unusual form of public library service	
4	Same as 2 with caption: Photography....	created to meet * exceptionally difficult conditions.	
5	Map of Norway (relief)	It is also the record of a visit to West Norway. * (Fade out music)	
6	Coast from 'Epos' - snow-capped mountains and blue sky behind	Norwegian librarians face uniquely challenging problems, many of them determined by geography. Norway is 1750 kilometres long - Kristiansand in the South is about as far from the North Cape as it is from Rome. * The mainland coastline is 2650 kilometres long but the total coastline including fjords	
[7]	[Oslo: Rådhus - flowers]	and islands is nearly 10 times that. *	

The choice of voice is important for the commentary recording. It must be someone with whose voice the target audience will relate and who can read effectively and conversationally in front of a microphone. The script-writer is not always the best person to read the commentary, although it may prove difficult to convince him of this.

The commentary recording should be made on track one or the left-hand stereo track of a four-track tape-recorder (open reel). If the recording is made on an ordinary cassette-recorder, the later addition of music and any editing of mistakes will be impossible without extra equipment.

If it is decided to use two voices to record the commentary, which helps to relieve monotony, give each voice substantial sections to read rather than jump too frequently from one to the other.

11.15 Editing

The master open reel tape should now be edited to remove errors as described in section 10.10.

11.16 Recording music or sound effects

The music or sound effects, carefully timed, should now be recorded on to track 3 or the right-hand stereo track, directly from another tape-recorder or record deck. The former is easier. Timing is critical but as the sound is being recorded on to a separate track of the tape to the commentary, it can be repeated as often as required without damaging the commentary track.

Time precisely the pause between the end of the identification and the first word of the commentary. If this is thirty-one seconds for example, the first ten seconds should be left blank to enable copies to be made from the master tape without including the identification. Music can then fill the next twenty-one seconds.

Starting from the last word of the identification run the tape for precisely ten seconds. Stop the tape. Then start the tape or the disc with the music set just before the music commences, and the master recorder at precisely the same time. The master recorder must be set to record track 3 only, the commentary track 1 must be in the playback mode. Let the music run for fifteen seconds at the correct recording level and then slowly fade the volume control to zero, taking six seconds to do so. Then stop the master tape-recorder.

Play back both tracks together and the music should fade out before the first word of the commentary. If it does not, repeat the operation until the timing is correct. The end of the commentary can have music recorded on it in the same way, fading up the volume from the last word in the commentary.

11.17 Copying to production tape

When the master tape is correct, copy both tracks of the master tape in stereo or mono to another open reel tape-recorder or cassette-recorder. If the Tandberg slide synchronizer is being used the mixed copy must be made in mono on to track 1 of the copy tape, as the synchronizer uses track 3 of the copy tape. The copy tape becomes the production tape, the one which is used for performances. The master tape should be kept safely and used for duplication purposes only.

11.18 Synchronization

The production tape should now be played back with the sequence of slides and the exact position of the slide changes decided. With manually and automatically synchronized programmes the slides can be changed at any point in the commentary and does not have to coincide with the ends of sentences. Indeed it is best to avoid always changing the slides at the end of the sentences that relate to them. Try to cover the period while the slide is changing in the projector with commentary wherever possible, so that one of the two senses involved is always being used. This produces a more flowing and pleasing presentation and keeps the audiences' attention. There will be occasions when a slide must appear on the screen to coincide with a keyword or the beginning of a sentence to which it relates. In this case the slide change should be operated four words before the keyword, remembering that an automatic slide projector takes just over one second or four words to change its slides.

However, the position of the slide change has to be appropriate to what is being said in the commentary. The picture must always relate to what is being said. The programme has gone wrong if the commentary talks about an information officer while there is a picture of a tree on the screen.

Once the exact position of each slide change has been determined, the script must be marked to show the position of the commencement of the slide change, that is four words before the slide is required. The position should be clearly marked with an easily recognizable symbol such as an asterix *. Synchronization or slide change marks can be clearly seen on the sample script sheet above. The first synchronization mark should occur before the first visual slide is required, to remove the black slide at the beginning of the sequence from the projector gate. The final mark should place the last back slide in the projector gate at the end of the programme.

The correct starting procedure for a tape slide programme. There is a simple procedure to ensure that the slides and the commentary tape are in synchronization from the beginning, each time the programme is shown.

The production tape should have been copied so that the programme commences immediately after the end of the coloured leader tape on the open reel or cassette tape.

Thus with the end of the leader tape over the tape head in the tape-recorder and with the first black slide in the projector gate, both machines can be switched on and the programme begun. The black slide will be removed by the first synchronization signal on the tape and the commentary and the first visual should appear at the same time.

Synchronization methods. The method used will depend on the form of tape slide programme. In every case, however, a copy of the written script marked with the synchronization points should be provided with the programme so that if the right synchronizer is not available, the programme can be manually synchronized by the presenter.

Manually synchronized programme. Here the marked copy of the script instructs the presenter when to change the slides. He will need a small light by the projector to enable him to read the script.

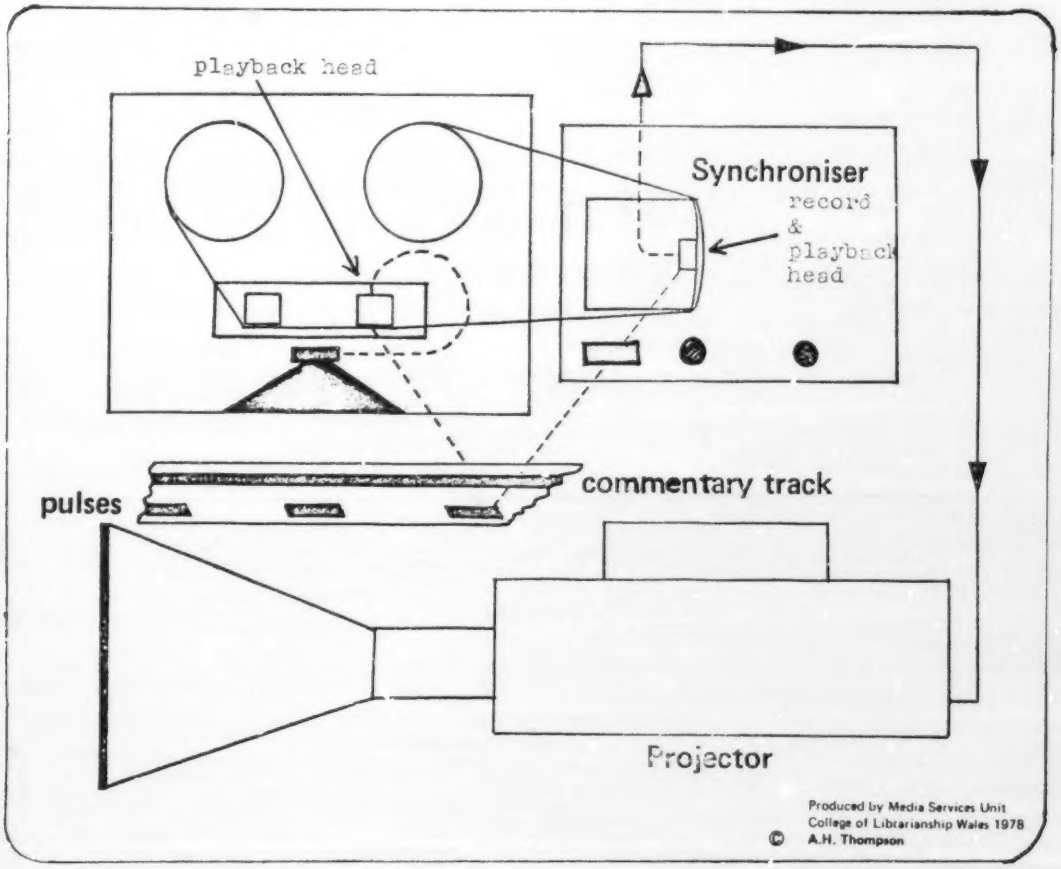
Audibly synchronized programme. Unlike the two other forms of programme, it is necessary to decide on the exact position of the slide change before the master commentary is recorded. The script should be marked up with the slide synchronization point in the recommended way and some way of audibly indicating this

synchronization point found. A teacup tapped with a pencil or a note struck on a childs xylophone will be satisfactory.

The commentary should be recorded as usual but either the script-reader or another person sitting next to him should strike the cup or the note each time a synchronization mark appears in the script. Test recordings must be done before the commentary is recorded to determine the correct position near the microphone for the cup or the note. This will ensure that the recorded synchronization signal is not louder than the voice on the recording.

When the recorded commentary is played back, the slides should be changed each time the signal is heard.

Automatically synchronized programme. The slide synchronizer should be connected to the tape-recorder as shown in the instructions. In the case of an independent slide synchronizer used with an open reel tape-recorder, this should be placed on the right-hand side of the machine.



Independent slide synchronizer working in conjunction with an open reel tape-recorder.

The synchronizer should then be connected to the automatic slide projector using the cable provided. The projector should be turned on and the first black slide inserted in the projection gate, and the rest loaded in the correct sequence. The production tape is loaded on to the tape-recorder with the leader tape over the tape heads. The synchronizer is set to the record mode to put its recorded signals on a separate track of the tape. It is essential that the commentary track remains in the playback mode.

Then while following the marked copy of the script and listening to the commentary, press the slide synchronizer change button for about one second each time a synchronization mark appears in the script. Otherwise the signal may not record properly. When the button is pressed, the signal is recorded on a separate track of the tape and the slides should advance in time with the commentary. The operator can see that all is correct.

When the last signal has been recorded to bring the last black slide into the projector gate and the commentary has been finished, stop the tape-recorder and release the record mode button on the synchronizer. This must be done immediately or the recorded signals may be erased when the tape is rewound. Rewind the tape, reset the slide sequence to the first black slide in the projector gate, ensure that the synchronizer is switched on but not in the record mode and start the tape-recorder. The slides should change automatically in time with the commentary.

If a mistake has been made, it should be possible to erase or insert a signal on the production tape, without having to resynchronize the whole programme. Check the instruction manual of the synchronizer to see if this is possible.

11.19 Checking the programme

The programme should be thoroughly checked to ensure that all is correct before it is shown to an audience. The final numbers in the sequence should now be marked on the slide with a permanent OHT pen.

11.20 Storage

It is recommended, where an automatic slide projector is used, that the slides should be loaded in sequence in the slide magazine and stored in it so that the programme is ready for immediate use. The box in which the magazine is supplied should also be used to keep dust out of the magazine.

Where a manual projector is used, the slides should be stored in order in plastic slide hangers.

A copy of the marked script and the audio tape should always be kept with the slides, the component parts being kept inside a large box. If the Kodak Carousel Magazine is used, the cassette and the script will fit inside the magazine box with the loaded slides.

12. VIDEO PRODUCTION

12.0 Introduction

Video sequences combine moving pictures with sound, either recorded simultaneously (live sound), or recorded at a later time (dubbed sound). Depending on the equipment available, the pictures may be in colour or black and white.

It must be stressed that video recording should only be used in training where movement is essential to the learning process, because the equipment is expensive and playback to large groups is more difficult to arrange than for any other of the av aids covered.

Also, picture quality is in general only adequate and the production of anything other than short sequences of a simple nature requires professional expertise and equipment.

12.1 Equipment required

This can be a video portapak, which consists of a hand-held camera and a portable video recorder (either open reel or, more usually, cassette) which is mains electricity or battery powered. Alternatively, it can be a hand-held camera coupled to a mains powered video cassette recorder. The former allows greater flexibility since recording can take place anywhere. Playback is usually effected through a television receiver, although some equipment is designed for playback through a television monitor. The size of the screen will determine the number of viewers who can watch at one time.

A supply of suitable reusable recording tape is also required. Though equipment requirements are expensive, this medium is simply operated by one person. The instruction manual must be read thoroughly and the equipment practised with, before a recording for teaching purposes is attempted.

Modern video cameras incorporate a small television screen which replaces the viewfinder and allows the teacher on location to see exactly what he is recording. It also enables the immediate playback of the recording over the same screen while the sound may be listened to through headphones. The teacher can immediately check that the recording meets the aim of the sequence.

These cameras operate under normal lighting conditions both inside and out. Whenever possible the camera should be mounted on a camera tripod rather than hand held for a much steadier picture is obtained in that way.

12.2 Production

Production techniques involve a mixture of slide production, tape/slide production and filming.

12.3 Planning

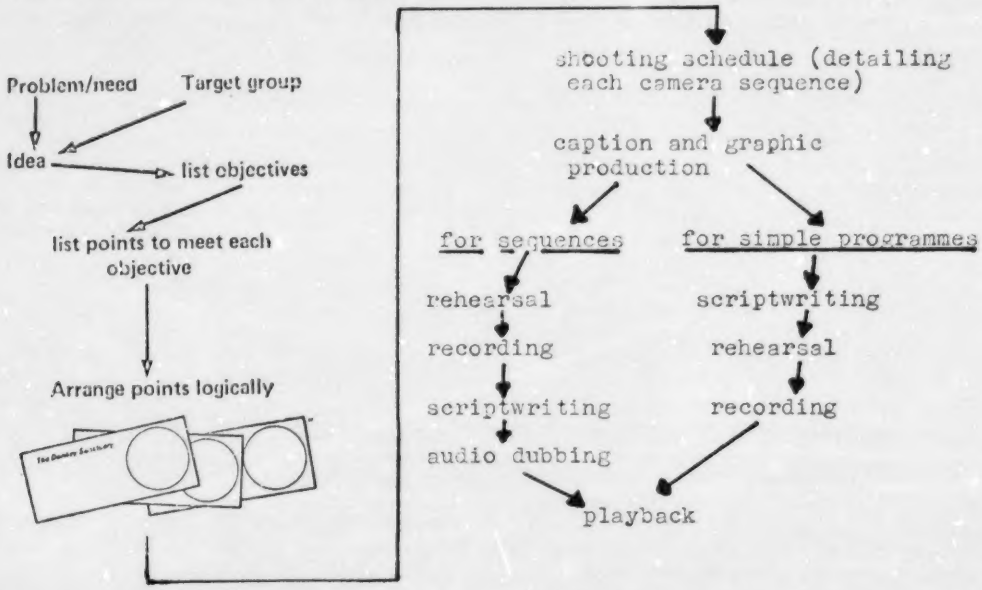
The initial stages are the same as for tape/slide production covered in section 6. For one long continuous sequence demonstrating a single operation or a role-playing exercise, the planning may be fairly brief. If a succession of camera sequences, which accumulate to make an entity, such as a tour of a library or information centre, or a complete programme on a topic like a computer search, or an interview with a children's book illustrator including illustrations of the work, then the planning will be at least as detailed as that for tape/slide.

12.4 Shooting schedule

It is now necessary to examine each point and visualize the sequence that will best illustrate it.

Modern video portapaks can be used in one of two ways, or in a combination of them. Firstly by stopping and starting the camera at the beginning and end of each visual sequence, the same technique that is used in film-making, except that the

pictures must be taken in order of the final programme. Alternatively, the camera can be kept running continuously for a longer period as it records movement in front of it, the camera itself being moved from one situation to another--a continuous recording technique. Older video portapaks are best used with the continuous recording technique.



Production schedule for video recordings.

Where the cine mode is used, single shots with no movement should last no longer than a tape/slide visual, that is an average of seven seconds. Where there is movement they can last longer.

Where the continuous recording technique is used, care should be taken to ensure that no visual sequence becomes visually boring and that smooth camera movements are made when required so that audience attention is retained. The teacher should watch television programmes to see how producers treat visual sequences. A camera left running for a long time in one position as it records one situation involving movement is hardly stimulating television, although it is a useful way of demonstrating a process.

The visual sequence should now be described on the story-board card. The following terms commonly used in slide, film and video production will help the teacher describe each sequence succinctly.

Picture types: l/s - long shot mc/u - medium close-up
c/u - close-up bc/u - big close-up.

Camera movements: Panning - this is the smooth and slow movement of the camera from side to side.

'Pan L' - move the camera to the left.

Tilting - this is the smooth and slow movement of the camera up and down.

'Tilt up' point the camera lens upwards.

Zoom - this is the operation of the zoom lens on the camera.

'Zoom in bc/u' Zoom lens to telephoto to achieve a big close up of the object.

The estimate of the length of each sequence should also be given in seconds.

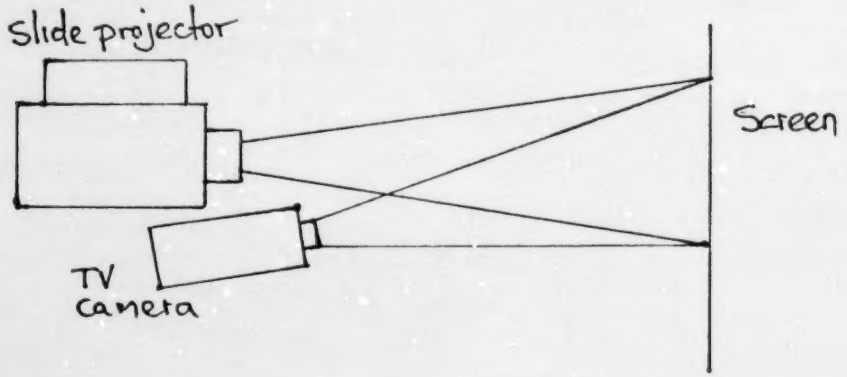
An alternative way of describing each sequence is to use a subsidiary set of story-board cards with simple drawings in a cartoon sequence showing the main features of the visual sequence. These are interfiled on the story-board in the correct order.

12.5 Captions and graphics

Any captions and graphics required must now be produced. Caption boards or magnetic boards are ideal as they are the correct size for a television camera close focused. Typewritten captions cannot be used without special equipment. Graphics or photographs must be produced large enough to fill the frame of the video camera when it is focused to its closest setting. This size can be identified by experimentation with the video camera.

The frame of a television camera is a different shape from that of a photographic slide or the film frame, which has a ratio of 2:3. The television camera uses a ratio of 3:4 which means that, when photographs or slides are copied, some of the detail will be lost. Captions and graphics can be made to this size however.

Slides, overhead transparencies and film sequences can also be copied and included in a video sequence. All three formats can be projected on to a white screen using a fairly small and bright picture size. The television camera can then be pointed at the screen and will take an acceptable picture when close focused. Be careful to avoid showing edges of the original picture on the video screen.



12.5 Programme production

When the story-board is complete and the necessary captions, graphics and visual inserts have been prepared, programme production can be considered. Production methods used will depend upon whether the programme is to have natural sound recorded on location or a vocal commentary added later, or whether it is to have a spoken commentary or script recorded with lip synchronization at the same time as the visuals.

Unlike a tape/slide programme which can be built up over a period of time, video programmes or sequences made using simple video equipment have to be 'filmed' in the order of the story-board--each planned sequence following on correctly. They cannot be rearranged later like slides without extra and complex editing equipment.

'Film' an identification--the title and date of production, at the beginning of the tape and leave a gap of thirty seconds before starting the programme.

Live sound recorded on location. If an initial caption is required this can be recorded first in the home institution before the teacher goes 'on location'. The location should have already been checked out, each sequence having been prepared and rehearsed if possible. Then working from the story-board the camera sequences are recorded in order, care being taken to cut off each one at the appropriate point so that there are no long visual pauses between sequences. The pace of the video recording is just as important as that of the tape/slide programme. Natural sound will be recorded simultaneously with the pictures. The sound level is usually controlled automatically by the recorder. Use of a microphone plugged into the video recorder instead of the camera microphone will improve sound quality.

The teacher can check that the programme is correct by playing the recording back over the monitor screen in the camera, although this should not be done too often if battery power is being used, as this will quickly deplete battery life. A spare fully charged battery should be taken on location if possible.

Sound commentary to be dubbed after the visual recording. This type of programme is recorded in the same way as the live sound programme above, when the natural sound will be recorded through the microphone on the camera. Once the teacher is satisfied with the visual content, he should view the programme several times, and, using the script-writing techniques covered in section 11.10, prepare a spoken commentary to supplement information shown in the pictures. A script sheet should be typed for the commentator and an audio recording made in studio conditions through a microphone plugged into the video recorder. The audio dub control is operated to erase the live sound on the video tape and allow the new recording to be made on the same track. The pictures should be watched on a screen while the commentary is being recorded so that the correct timing can be achieved.

Programmes or scripted sequences with lip synchronization. To achieve this, vision and sound have to be recorded simultaneously, and the script will have to be prepared in advance, contrary to normal practice.

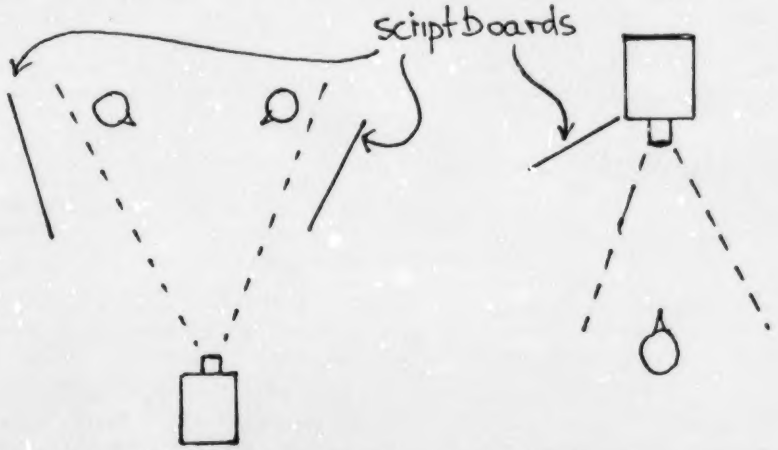
Each visual sequence should be described in detail on the story-board. When the teacher is satisfied with the planned visual side of the programme he must prepare a script to add information to the proposed pictures. This is sometimes difficult as the pictures do not yet exist.

As each sequence in the programme can be shot separately but in order, the visual description and the accompanying script for each sequence can be written out on a different script sheet as for tape/slide production. Camera movements and positions of equipment and participants will have to be noted on the script sheets as well as the script.

The programme can now be put together. After starting with an identification and a gap of thirty seconds, the credits can be recorded. The first visual sequence can be rehearsed and recorded and so on to the end of the programme.

The number of rehearsals is important. If initial planning has been done properly, no more than three rehearsals should be necessary. More bring on boredom which can lead to a decrease in efficiency.

It is better if the participants are not seen to be reading from scripts, but appear to speak naturally wherever possible. Not everyone is good at remembering the text they have to say, so some form of script-board is necessary. The simplest way to do this is to have a blackboard or whiteboard, or a large sheet of paper next to the camera and facing the 'actors', with the words written in large enough letters for them to read. Alternatively, boards can be out of camera view at each side if the participants are not to be looking at the camera.



It is essential that each sequence be correct before proceeding to the next, as it cannot easily be retaken after the programme is complete.

12.7 Playback

The teacher should view the programme to satisfy himself that it meets his aim. It can then be tested on a group of the target audience.

When simple video units are used, whether these are portapaks or the more inflexible camera plus video cassette recorder, it should be made clear at the start to any audience of students or librarian/information officers that, while this has the advantage of being the only equipment that permits movement to be recorded and played back immediately, it is not possible to make programmes of professional quality on equipment costing less than one-hundredth of that used in television studios. Showing such a programme to an audience which does not understand the problems of using this equipment or who have not had this explanation is not recommended, as they will judge the programme with the criteria used for those regularly seen on broadcast television.

12.8 Storage

Video tapes and equipment should be stored in air-conditioned areas in tropical and subtropical countries. The tapes should be stored in the manufacturer's box in dust-free conditions.

13. ADAPTATION OF AV AIDS AND PROGRAMMES

13.0 Introduction

It has been stated earlier that audio-visual aids and programmes produced by a teacher in one institution may not be completely appropriate for use by other teachers in the same country, and may be even less appropriate for use in other countries.

However, a teacher can successfully use av aids he has produced with students from a wide range of countries either in his own institution or elsewhere by judging their effectiveness from student reaction, and pacing their use accordingly.

Commercially produced audio-visual programmes (films, video and tape/slide programmes) will often not be completely appropriate to teachers' needs in the country of production and even less so in other parts of the world. This is because most commercially available programmes are designed for a wide audience to make them economically viable, rather than for a specific target group and because of the diverse cultural and educational patterns and needs which may characterize various countries and regions.

13.1 Adaptation of other teachers' aids

The copyright of an audio-visual aid generally belongs to the teacher who designed it. When requesting copies of another teacher's av aid, always obtain their approval for its use or adaptation for teaching purposes.

OHTs. Good paper copies of another teacher's OHTs can either be redrawn or photocopied on to acetate. Wording that needs altering or translating should be done before the acetate copies are made.

Slides. If it is important to identify the site shown on a slide, ask the donor for the necessary details and note these. When slides are borrowed for copying, retain them, if possible, until the copies are returned from the processing station in case there are problems.

Sound recordings. Copies of original sound recordings usually need adaptation only when the information is so important that translation is required. This is most easily done by translating from the original on to paper and recording the translation back on to another tape.

Tape/slide programmes. These may require adaptation which can be accomplished by re-recording the commentary, using a voice with which the new target audience will be comfortable. Translations of the commentary should be done from the original script if possible. This can then be re-recorded with the appropriate synchronization system. Inappropriate slides can be replaced by newly photographed ones.

Video sequences and programmes. These can be translated and re-recorded on to the audio track of the video tape using the audio-dub facility.

Adaptations of the original commentaries of tape/slide and video materials can also be made to meet local requirements. But this is likely to be a complicated task because of timing problems. The script may need to be completely rewritten to take care of this problem.

13.2 Adaptation of commercially produced audio-visual programmes

When previewing commercially made programmes, the teacher should note on paper points made with which he does not agree or which need amplification. Portions which may not be readily understood by the audience must also be noted so that they can be explained orally. These notes form the basis for the teacher's remarks after presentation.

Tape/slide and video programmes can be adapted as indicated above.

Films. A number of audio-visual programmes exist in film format. This cannot be easily altered or adapted locally. Nor is it easy to use only part of a film, unless the teacher is prepared to project that part of the film he does not require before the lecture begins. Film commentaries can be translated by working from the original commentary, but cannot be recorded on the film itself. The translated commentary can be recorded on tape which can be played back at the same time as the film with the volume control on the film projector turned off. However, there is no guarantee that the two machines will be synchronized and the teacher must be constantly on the watch to stop one or the other of the machines for a few moments to allow the other to catch up.

14. PRESENTING AV AIDS

14.0 Introduction

The manner of presentation is almost as important as the av aids themselves. Poor presentation can reduce or negate the value of even the best aids.

Any teacher using them can encounter embarrassing problems during an audio-visual presentation, but with correct planning and presentation techniques, these occasions will be very few and quickly put right.

The use of audio-visual equipment in a lecture situation presents no additional problems, if the teacher has learned and practised its use.

14.1 General preparation

In advance of any lecture where av aids are to be used, the following steps should be taken, unless the equipment concerned is permanently set up in the classroom.

Booking equipment. The equipment and aids required should be booked well before the date of the lecture to avoid finding them already in use.

Booking a room. Book a suitable room, with electricity supply, black-out facilities and enough space to hold the number of students foreseen.

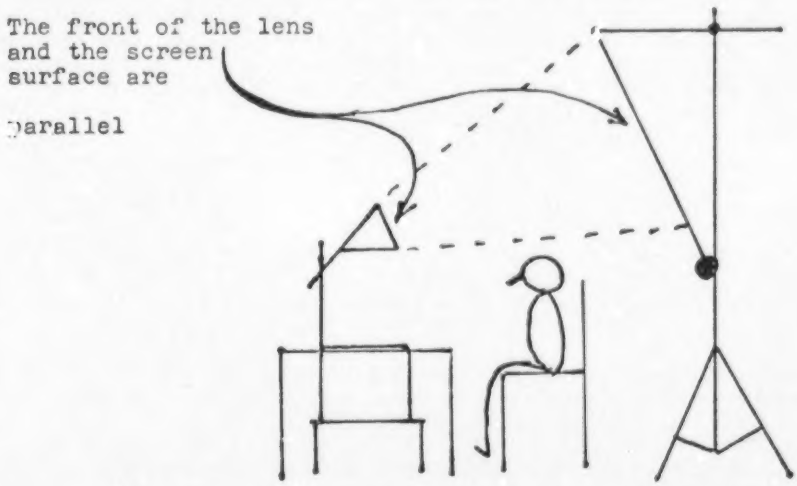
Set up equipment. Set up the equipment at least half an hour before the lecture is to begin. This leaves plenty of time to sort out problems that may occur and avoids stress. Equipment should not be set up after the class has already assembled, as this is a waste of teaching and learning time. Check that all equipment is in working order, is clean, that spare bulbs are available in case of bulb failure and that the procedure for replacing a bulb is known.

Arrange the room. Arrange the room so that all the students will be able to see the presentation. Curtains should be pulled, if darkened conditions are required.

14.2 Overhead transparencies

The overhead projector may be arranged so that the platform of the projector on which the OHTs are placed is beside and at the same level as the top of the teacher's desk or table. This enables him to work sitting down. If he prefers to stand, the projector should be placed on the desk top.

The screen should be in the corner or the centre of the room and about 2-3 metres behind the overhead projector. A screen with a keystone arm should be used so that the front of the projector lens is parallel to the surface of the screen. This ensures that the two sides as well as the top and bottom of the image on the screen are parallel. If not, the 'keystone' effect is produced. The screen should be adjusted so that the students can see the whole surface.

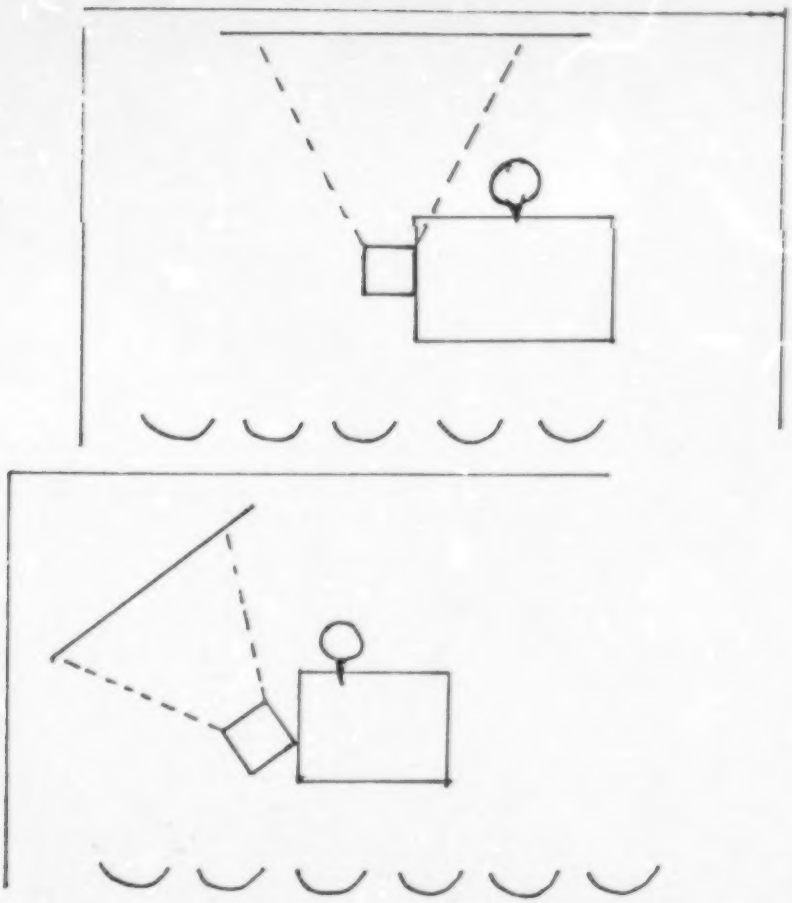


The low light setting. The overhead projector should be switched to the low light setting throughout the lecture, unless conditions warrant the use of the full light setting. The low light setting will double the lifetime of the bulb and will be sufficient for most classrooms.

Before the lecture. The required OHTs should be arranged in a pile next to the projector in order of use. The first one should be placed on the projector, the projector switched on, the focus and positioning on the screen checked and corrected. Once this has been done, the teacher will not need to look at the screen during the presentation. Switch off the projector.

Presentation techniques. The teacher should switch on the projector when the first OHT, already in position, is required. The image of the OHT will appear on the screen, while the teacher can see the transparency placed on the platform of the projector. He can point to specific items on the projector platform with a pencil or finger, the shadow of which will appear on the screen.

When one OHT is replaced with another, ideally a piece of paper should be held well below the lens with the left hand while the OHT is changed with the right. This removes the image from the screen while the change-over is made. This is a better procedure than turning the projector on and off each time an OHT is changed, as this can lead to early bulb failure.



When the teacher has finished talking about one OHT, but is not ready to use the next, the OHT should be turned off or the platform covered if the pause will not be too long. This avoids the distraction of a no longer appropriate image or staring at a blank, lit screen.

14.3 Slides

The low light setting on the projector should be used if possible to prolong bulb life.

Before the lecture. Check that the slides have been loaded into the magazine of an automatic slide projector, with a blank slide at the beginning and end of the sequence. The image on the screen should be focused and positioned properly, the slides quickly projected to ensure that they are all loaded properly, and the sequence returned to the first black slide which should remain in the projector gate. Turn off the projector.

Presentation technique. When the slides are required, the lights in the room should be turned off and the projector switched on. The black slide prevents white light from flooding the screen. The teacher should operate an automatic slide

projector from the front of the class using the remote control. With a hand-operated projector he should work from the projector position. The teacher should always project his own slides and never ask someone else to do it to ensure that they are projected as he wishes.

The sequence should end with another black slide and the lights be turned on.

14.4 Sound recordings

Before the lecture. These should have been rewound to the beginning after checking volume levels and content. The tape should be left ready to commence just before the first sounds of the programme. The machine can be left switched on.

Presentation technique. The tape-recorder should have been placed on the teacher's desk facing the students. When required, the teacher should press the play control, stopping and restarting the tape at appropriate points.

14.5 Tape/slide, film and video

Before the lecture. These should have been checked for focus, sound level and content, and returned to the beginning of the programme, leaving the initial black slide or film in the gate of the projector, or the video tape set just before the pictures start. The machines should be switched off.

Presentation technique. When required, the lights should be switched off and the programme started. Generally, complete programmes should be shown in full. Shorter sequences can be shown, provided these have been preset before the lecture, by advancing the programme to the beginning of the selected sequence.

14.6 Presentation of av aids outside the teaching institution

Teachers may be required to give lectures with av aids in strange surroundings.

Check location and equipment. Check by telephone, letter or visit, whether the equipment required is available at the location, and try to ascertain that it is working properly and that spare bulbs are available. Find out as much as possible about the room where the presentation will take place--lighting conditions, curtains, power sockets, screens, etc.

Taking equipment. If there is no equipment available, arrange to take the equipment. In addition, take an extension power cable with a multi-plug box on one end and the correct plug fitting on the other, spare bulbs and fuses, a screw-driver, pliers, etc. The aids should be arranged and carefully packed. Av equipment normally travels perfectly well by car.

Preparation. Always arrive at the location well before time, at least an hour if possible. Despite advance arrangements it may be necessary to arrange chairs, clean a piece of equipment, set up equipment and prepare the av aids. Set up equipment as in 14.1 and present the programme as in 14.2-5.

14.7 Supplementary hand-out material

Paper hand-outs should accompany the av aids, if the student is required to retain detailed information. They are not necessary if the aim is to convey a general impression.

If the teacher bases his lecture structure on the OHT, it is a good idea to give each student on the course a set of copies of OHTs used. The student may then add his own notes to them and use them as a basis for revision.

Where av programmes contain lists of key points to be remembered, these should be listed on paper with a synopsis of the programme to refresh the students' memory. Students can file copies of this with their notes.

If the students are required to watch av programmes in the dark, hand-outs should be distributed only at the end of the programme. This is the most effective way of preventing students from trying to read them in semi-darkness.

14.8 After the presentation

The teacher's work does not finish with the end of the lecture or question time.

Switch off all equipment as soon as possible and allow all projection equipment to cool down to room temperature before attempting to move it. This can be done by operating the fan only in the projector for about five minutes, if this is separately switched, or switching off completely and leaving it for ten-fifteen minutes. If moved before it is cool the bulb will probably break.

While waiting for the projection equipment to cool, return all programmes to their beginning and repack or file them carefully.

When cool, demount all equipment and screens and return them to their point of issue, unless they are permanently stored in that room, or someone else is using them afterwards in the same place.

Before leaving, ensure that all power points are turned off and that all av aids have been removed, including that odd slide or black slide overlooked in the gate of the projector.

14.9 Dealing with breakdowns

However carefully the presentation is planned, a bulb can break or a wire come loose during a lecture.

Immediately a fault becomes apparent, stop the equipment and turn on the lights. Apologize to the audience, explaining the reason for the breakdown if possible.

If the problem is an obvious one, repair it as soon as possible, and recommence the programme from where it left off.

If the problem is not obvious, get one of the students to lead a discussion or otherwise occupy the group, while attention is given to solving the problem. Check plugs, wires, connections and bulbs, and the threading of the programme. Repeat all the stages of loading the programme. Send for a technician, if one is available, to solve the problem. Recommence as soon as possible. If the breakdown lasts longer than ten minutes, it is probably best to cancel the presentation, continue the lecture on another topic, and present the programme at the next opportunity.

15. BASIC MAINTENANCE

15.0 Introduction

Basic maintenance to improve sound or visual quality on some types of av equipment is a regular part of the work of any teacher responsible for audio-visual equipment in institutions where technical support is not available. Basic maintenance is essential to keep equipment in good working order.

15.1 Projectors

Wiring. Check the wiring in the plug for correctness. If any coloured wires show in between the plug and the outer insulating sheath of the cable, rewire the plug correctly, clamping the outer insulating sheath of the cable firmly in the clamps in the plug, if fitted.

Cleaning. Clean all accessible lens and glass surfaces with a lens cleaning tissue or cloth, or a soft, well-used but clean handkerchief, or a paper tissue followed by a brush to remove the tissue fibres. Do not use a harsh cloth, as this can scratch the lens surfaces. Keep the casing of the projector clean.

Internal components. Check that the fan unit is working efficiently and that the heat shield is intact. The instruction book will show their positions. Do not use the projector if these components are not working properly or the film material will be irreparably damaged. Have the projector repaired as soon as possible.

Projection gate. Check that the projection gate in a slide or film projector is scrupulously clean before projecting slides or films. Otherwise damage may occur. A soft brush or a 'cotton bud' (small wads of raw cotton on the ends of a short stick) will get into those difficult corners.

15.2 Audio equipment

Wiring. Check all wiring on the machine and in connecting cables and rewire as required.

Head cleaning. Clean the record, playback and erase heads of all tape-recorders either with a 'cotton bud' moistened with industrial alcohol or methylated spirits or by use of a cleaning tape or cassette for about 15 seconds. This should be done after about every 10 hours of playing time. With a brush or 'cotton bud' remove any dirt from around the recording heads and the drive spindle of the tape-recorder. Change the stylus of record players regularly. A diamond stylus should last for between 1,500-2,000 playings.

Rotary or slider controls. The 'crackle' during the operation of volume or other controls is usually caused by dust inside the control where it is not easily reached.

Rotating or sliding the knob from one end of the scale to the other about thirty times will often improve the situation.

15.3 Video equipment

Wiring. Check all wiring to plugs, aerial input socket and connecting links between the video recorder and the television set.

Tuning. Check the correct tuning of the push button channel selectors, including the VCR channel, which can be tuned in by playing a good recording on the

VCR and tuning the VCR channel selector until a good picture is shown. Exercising these push buttons several times may help if the picture is not correct when the channel is selected.

Tracking. If the picture from the video cassette recorder is 'tearing' and is not steady, adjust the 'tracking control' on the video cassette recorder.

PROMOTING THE DEVELOPMENT OF AUDIO-VISUAL AIDS BY TEACHERS OF LIBRARY AND INFORMATION SCIENCE PARTICULARLY IN DEVELOPING COUNTRIES

0. INTRODUCTION

Earlier sections of this guide have stressed the contribution av aids can make to improving library and information science teaching and have provided practical guidance on the development of effective aids. It is hoped that a final section will assist in the formulation of long-term development programmes aimed to promote their use within schools of library and information science.

1. METHODS OF PROMOTION

1.1 Exposure to av aids

Many teachers of library and information science have never seen av aids used effectively. Few of these teachers will read this guide before having been shown their value.

Av aids are little used in primary and secondary education in many parts of the world and even where simple forms like the chalkboard are encountered, techniques are often inadequate. The use of av aids is at best only sketchily taught in many teacher-training institutions. Some audio-visual equipment is now available within many institutions of higher education, but this is often underused and may be badly maintained and poorly selected. Often there are no trained technicians to assist in its use.

Experience suggests that, when teachers have an opportunity to observe the correct use of av aids, they quickly realize their potential value for their own teaching. However, this exposure must be followed by some training and guidance to ensure standards of production of a good level. Otherwise there is a danger that teachers may become disillusioned by the ineffectiveness of their first efforts.

1.2 Training

Introductory training courses for the simpler aids. While it is expected that the present guide can help individual teachers, there is certainly also need for the organization of regional or national introductory courses.

Such courses should train selected teachers to a high standard to act as trainers themselves.

The objectives should be:

to expose teachers to the effective use of simple av aids;

to convince them of the value of such aids for their own teaching;

to train them to make effective av aids and to present them effectively to others;

to help them design further training courses in this field.

Participants would be teachers from schools of library or information science, selected on the basis of their general aptitude for teaching, interest or

enthusiasm in the area of av aids and particular talent or interest in some aspect of the field such as photography, recording techniques, or film-making. They would be expected to conduct further training courses in their own institution.

Such introductory training courses should be short and intensive, normally not lasting more than ten days or two weeks. They may be located at a library school, a national library or library association where the premises include suitable workrooms in addition to a teaching area and some relevant equipment. A nearby photographic development service and suitable accommodation for participants is also required.

Programme. A suggested programme for an introductory training course follows:

Day 1	Introductions. The value of av aids in teaching library and information science. Demonstrations of their use. Discussion.
Day 2	Planning av aids. Aim, objectives, target audience, format, equipment--use and maintenance.
Day 3	Project 1--Analysis of teaching programmes to identify areas where aids can be used. Presentation of project and discussion.
Day 4	Slides. Basic photographic techniques. Photographic workshop--use of camera.
Day 5	Caption and graphic production. Preparation of talk-over slide sequences.
Day 6	Project 2--Production of a set of slides to illustrate a selected theme.
Day 7	Overhead transparencies. Production techniques. Workshop session practising these techniques.
Day 8	Project 3--Making a set of overhead transparencies to meet specific teaching needs.
Day 9	Sound recording, production techniques. Project 4--Making a sound recording for teaching purposes.
Day 10	Presentation of Projects 2, 3 and 4 to participants. Discussion and evaluation. Planning training courses in av aids. Course round-up and evaluation.

Training courses at the institutional level. Participants in courses like those described above will wish to promote on their return the training of their colleagues in the use and preparation of av aids and to encourage the extension of their use.

Initial efforts should be concentrated on convincing colleagues of the value of these aids. Then training sessions may be organized on the planning and production techniques of one simple aid at a time.

When possible, this work should be done in conjunction with the librarian of the institution, it being generally desirable that the library become a 'resource

centre' and house and maintain equipment and materials for av aids. It may also well act as a bookings centre for equipment use.

2. COLLABORATION WITH EDUCATIONAL TECHNOLOGY UNITS WITHIN THE PARENT INSTITUTION OR OUTSIDE

As institutions develop av aid programmes and acquire equipment and materials to support this effort, the teacher trained in av aid production will increasingly need the support of a trained technician. After such programmes reach a certain scale, it is uneconomic to employ a teacher to undertake the routine tasks of equipment maintenance and maintaining stocks of audio-visual materials.

Where the teacher has also set up courses for students in the use and production of audio-visual materials in libraries, the services of an audio-visual technician become essential. It is impossible to run practical sessions with large numbers of students without technical support.

Technicians are most commonly appointed either to the staff of the library, where they also undertake audio-visual duties related to the library's resource centre activities, or to the educational technology unit of the institution.

Where the production of tape slide and video aids is to be undertaken, most teachers will need assistance from technical staff, and access to equipment and facilities commonly available only outside the library or information science teaching faculty of the institution.

In institutions where the library is being developed as the resource centre, the teacher should use its facilities and staff. This solution is often found preferable to the establishment of a separate educational technology unit in the institution.

These support services are fully effective only when staffed by trained audio-visual producers and technicians who are responsive to teachers's needs. However, this staffing is not always available, even though the equipment may be at hand. Hence, it is often necessary to have at least one teacher trained thoroughly in av methods.

3. NATIONAL POLICY

Systematic development of audio-visual aids would be facilitated if their preparation and use were encouraged in the framework of national information policy.

A national policy, once adopted, could be effected by the establishment of a committee including representation of the information and education communities, professional associations, professional schools and the national library.

The committee would advise on the implementation of the policy, assess needs, determine priorities, review the progress made, and obtain the necessary funding.

4. EQUIPMENT REQUIREMENTS FOR LIBRARY AND INFORMATION SCIENCE TRAINING INSTITUTIONS

The equipment available varies from country to country. Where a locally manufactured product is acceptable and made by a reputable manufacturer, it should be

used. The use of locally made equipment is usually advantageous in terms of servicing and spare parts. For a few items of av equipment including slide and film projectors, there are well-established international manufacturers whose equipment can be found in most parts of the world. For reasons of standardization and to encourage the transfer of av aids, this equipment may be preferred.

When making initial equipment purchases, the individual institution should put reliability, flexibility, robustness and availability of servicing and spare parts before price. If the use of av aids is to succeed, the equipment must be in good working order and give the best reproduction possible.

Minimum equipment requirements. The following equipment is essential for the use and production of simple av aids:

Overhead projectors. A minimum of two, or ideally one in each classroom, permanently sited, should be provided.

Slide projector. One or more automatic slide projectors, plus extra slide magazines will be required. The Kodak Carousel range is internationally available and recommended as a standard projector for classroom use. A robust manual projector should be obtained if an automatic projector is not available.

Two or more projection screens 5 feet by 5 feet square, or 1½ metres square should be provided. They should be tripod-based, portable screens with keystone arms. Ideally there should be a screen in each classroom.

One open reel tape-recorder and one or more good quality cassette recorders with microphones should be available. The Tanberg 1500 series open reel tape-recorder is recommended where available.

One 35mm single lens reflex camera (semi-automatic), either fitted with a macro lens or with an additional macro lens.

A tripod, cable release, filter ring and coloured filters, plus an automatic electronic flash unit should also be provided.

An electrostatic plain paper photocopier.

A file of the instruction manuals issued by manufacturers should be kept for easy consultation.

In addition, stocks of the following materials should be maintained:

OHT acetates, frames and pens. The acetates and frames can be made locally if necessary.

35mm photographic film. This is cheapest when purchased in bulk, and should be kept in a refrigerator until use and should be developed as quickly as possible after use.

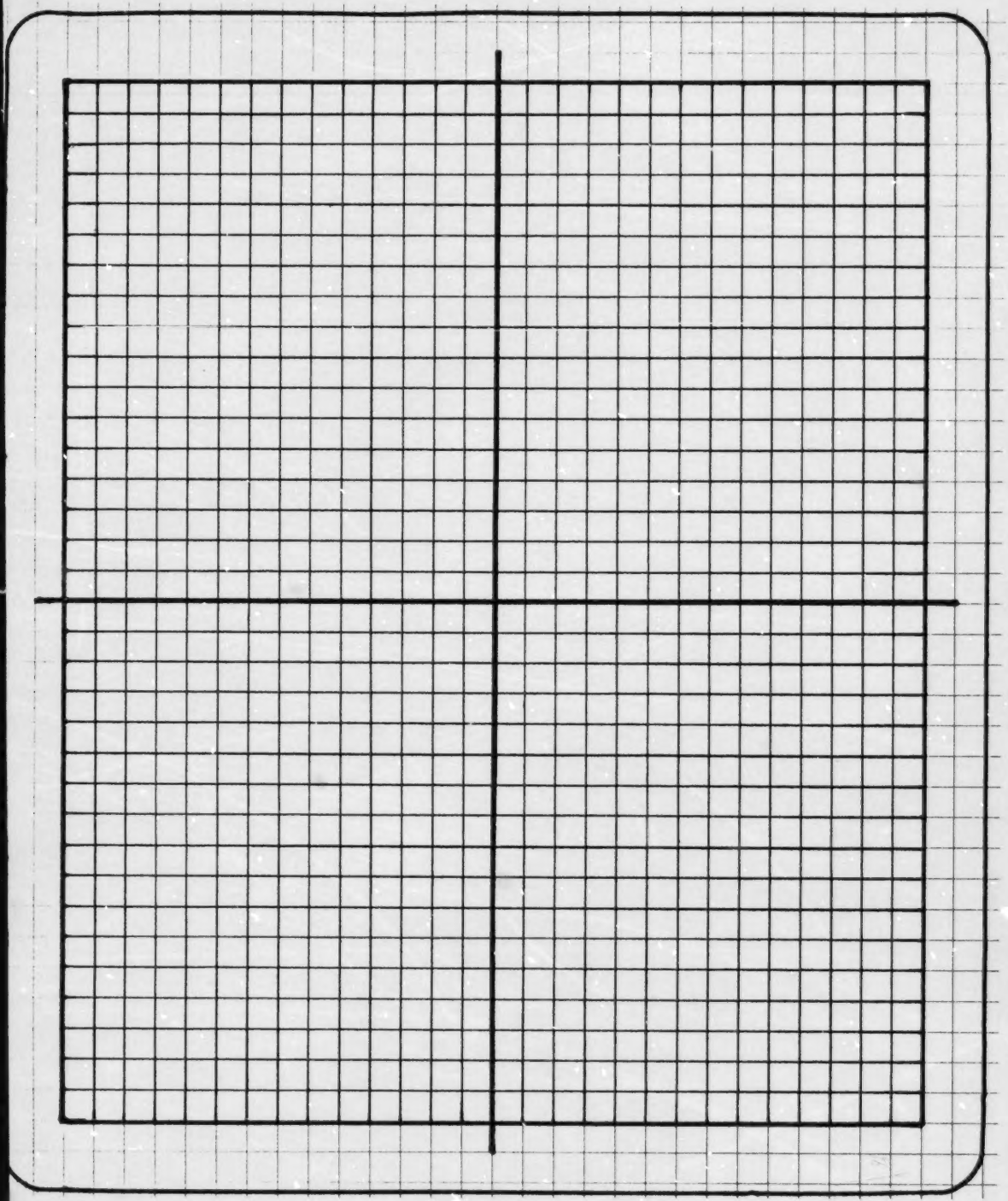
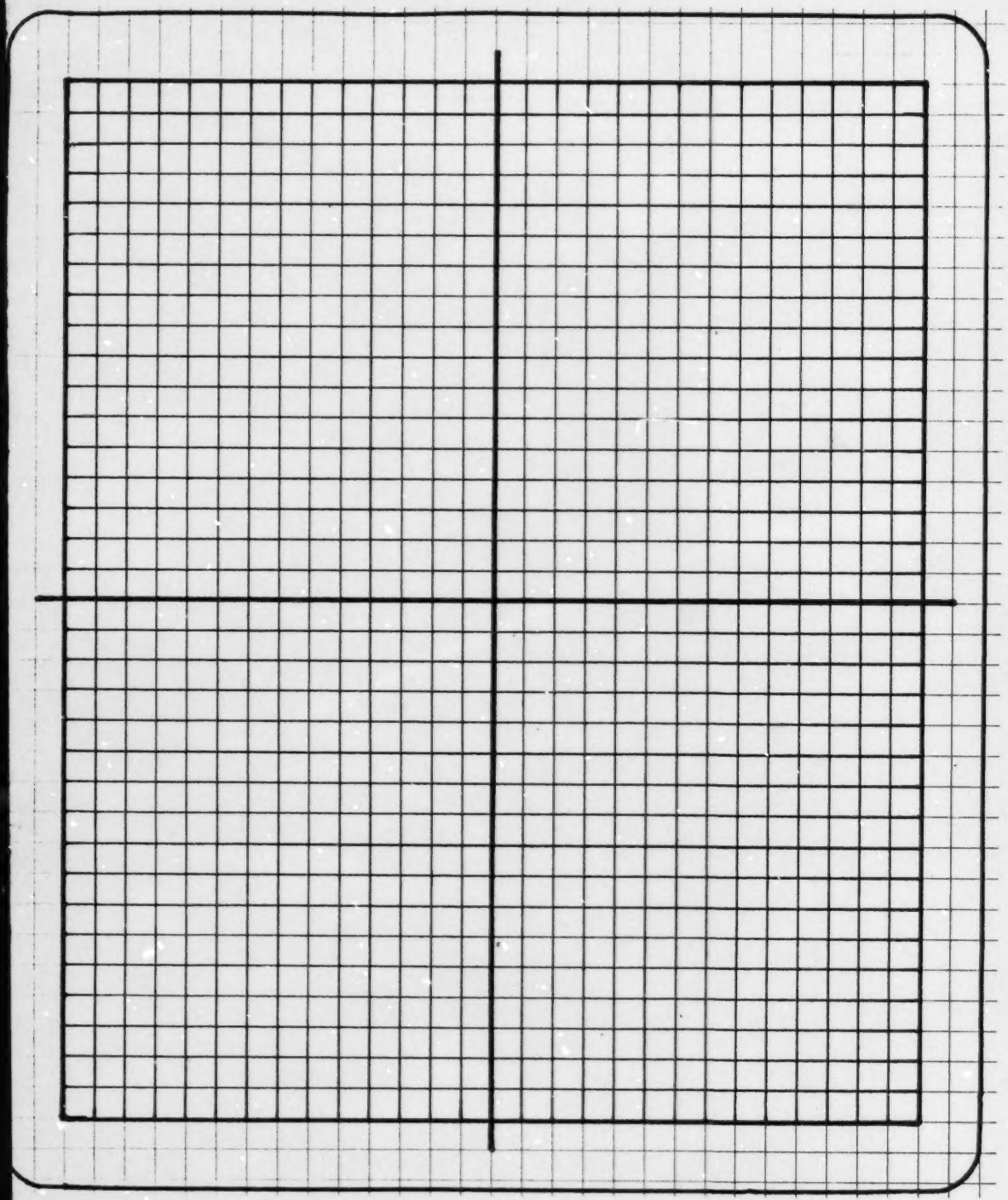
Open reel and audio cassette tapes. These can be purchased in bulk from a reputable manufacturer.

Additional equipment. This is equipment that may well be found in the parent institution, in the library or in the library or information science school itself. It permits the playback of the more sophisticated audio-visual aids and programmes where these are available.

16mm film projector. Both the Elf and Bell and Howell ranges are internationally available and are recommended.

Video cassette recorder and colour television receiver.

To encourage the international acquisition and circulation of av aids in video cassette form, triple standard video cassette recorders and colour television receivers are required. The choice of the cassette format--Sony U-Matic, VHS or Betamax, at the time of writing--should be based on the extent to which a particular format is already used, either in the country or in the institution. Other more localized systems are not recommended:

Video portapak equipment or a video camera that can be fitted into the video cassette recorder.

A slide synchronizer or cassette recorder with synchronization facilities.